

PACKAGING ARRANGEMENT FOR TRAMPOLINE/POOL ACCESSORY

My copending applications 60/052,052 and 60/050,324 (attached as Appendixes A and B) disclose a safety fence accessory for use with trampolines. Also disclosed are various games that employ the safety fence as a structural support.

The same fencing concepts can be employed with above-ground pools as well. For example, the upright poles of my safety fence can be secured to first and second straps positioned around top and bottom edges, respectively, of an above-ground pool. A third strap can link the top of the poles (e.g. six feet above the top edge of the pool). A fence structure like that disclosed in the cited applications can be mounted to the poles. Such a fence can serve diverse purposes, including preventing balls and other pool toys from leaving the pool area, and restricting access to the pool. Watersport game accessories can likewise be mounted to the poles and fencing, as further detailed in the cited applications.

U.S. Patent 5,399,132 discloses another trampoline fence arrangement, employing PVC or metal pole frameworks to suspend fencing material. The patented system contemplates poles of uniform diameter, and is illustrated with reference to continuous, rather than joined poles. A drawback of this arrangement arises in shipping. If the poles are single-piece, the package is necessarily quite large -- perhaps eight feet long. If the poles are multiple-piece, the package girth is increased, to accommodate the plural pieces needed for each support framework. Costs of shipping are related to carton size, making the patented system relatively expensive to ship.

In accordance with a preferred embodiment of the present invention, such drawbacks are overcome and additional advantages are provided. The support poles of my safety fences are formed of plural nesting poles. For example, a first pole is two feet long, and has an outer diameter of 1.75 inches. A second pole is six feet long, and has an outer diameter of 1.5 inches. For shipping, the first pole is coaxially positioned over the second pole, resulting in a net length of just six feet. Moreover, the first pole has a dimple on its end (an artifact of the tube cutting process) that reduces its inside diameter to less than the 1.5 inch outer diameter of the second pole. This prevents the first pole from sliding along the second; instead, it is constrained to a

position at the end of the second pole. This arrested movement overcomes a drawback in some other nested-tube arrangements, in which sliding of shorter tubes is possible, with the possible consequence of inertial damage to the shipping carton (e.g. blowing out an end of the carton).

In the preferred embodiment, the nested pole arrangement is slid into a surrounding foam tube, having an opening of about 1.75 inches in diameter. This further constrains any movement of the first pole (due to the close fit within the foam tube). It also protects a painted finish on the poles. The foam tube helps fill air space in the carton, improving the carton's crush-resistance (e.g. when stacked). The foam also protects other contents of the carton (e.g. an instructional videotape) from damage due to encounters with the poles. (The videotape instructs the user in assembly of the safety fence, thereby saving telephone support costs.)

Sectional views of a shipping carton, including plural nested poles together with fence netting, caps, video, etc., and showing shapes of associated foam (styrofoam) inserts, is shown in Appendix C.

Similar packaging arrangements can advantageously be employed for shipment of tubes for other recreational equipment, such as outdoor play structures (swingsets, etc.).

In many embodiments, the poles are metal. But this need not be the case. PVC is one option. More preferable than PVC in most instances is fiberglass. The particular material can be selected to tailor the flexibility, elasticity, and strength of the resultant system as desired. One embodiment employs a fiberglass second (upper) pole with a steel first (lower) pole. Another embodiment employs a heavier gauge stronger steel first (lower) pole, in conjunction with a lighter, more elastic steep second (upper) pole.

Varying the overlap between poles, and well as varying height of the pole and/or overlap off the ground, allows the system to be adjusted for different demands. For example, enlarging the overlap region, or extending it further above the trampoline, stiffens and strengthen the system for heavier or taller individuals,*whereas mounting the overlapping region below the trampoline frame adds flexibility for lighter individuals.

Telescopic fitting of poles facilitates adaptation of a single fence kit to differently sized trampolines or pools. For example, 10 foot diameter trampolines are typically 20-24 inches high,

whereas 14 foot diameter trampolines are typically 33-36 inches high. End user customization of the safety fence is required, if a single model of fence is to be employed with both sizes of trampolines. A fixed length tube (whether of constant diameter, or tapered as by swage joints) requires the customer to cut off an end of the pole to adjust the height. The present telescopic
5 (slip fit) joint permits the customer to customize the pole height by simply by coupling the tubes (whether by a screw, bolt, compression straps, etc.) to achieve the desired length. Excess length is not discarded, but rather fortifies the overlap and the strength of the resulting structure.

Additional details on my safety fence, improvements thereto, and packing/accessories therefor, is provided in the attached Appendix C.

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To	BILL CONWAY	Phone #	503 226 7391
Co./Dept.		Phone #	408 866 3120
Phone #	503 226 7391	Fax #	408 866 3124
Fax #	503 228 9446		

Extruded netting:

The nodes and strands were specifically designed to be rounded/oval, and have smooth transitions to significantly reduce likelihood of cuts/abrasions to users or the pole foam upon impact. This is the first time a mono filament, extruded, unwoven polypropylene product has been used in this application. Among the many products we tested, this was the only unwoven extruded product to pass our impact testing without zippering. As result of our proprietary cutting tool design, this is the first time a product like this has been cut longitudinally in production to yield a smooth clean edge.

Slip fit Pole design offers several advantages:

The materials used for the upper and lower pole sections may be varied to adjust the flexibility, elasticity, and strength of the system. For instance, a fiberglass upper with a steel lower, or a heavier gauge stronger steel lower combined with a lighter more elastic steel upper. Varying the overlap as well as varying height of the Pole off ground allows the system to be adjusted for different demands. Example: enlarging the overlap section or extending it further above the trampoline will stiffen and strengthen the system for heavier or taller individuals whereas mounting the overlapping section below the trampoline frame will add flexibility for lighter individuals.

Slip fitting the poles allows the court to fit on different height trampolines. Example, 10 foot trampolines are 20-24 inches high, 14 foot trampolines are 33 -- 36 inches high. End-user modification is simplified. A swage joint requires the customer to cut off the bottom of the lower Pole to adjust the height versus a slip fit joint that requires the customer to drill a hole through one Pole or spaced apart holes could easily be provided during manufacture.

Packaging:

By overlapping the poles completely for packaging purposes they occupy nearly half the space of a swage fit, or non-slip fit product. This new packaging design for outdoor play structure equipment yields some significant cost saving advantages in boxing, warehousing, shipping, as well as floor space for the retailer. The By leaving the dimple (generated during the tube cutting process) at one end of the larger Pole, the larger shorter Pole is prevented from completely sliding over the smaller longer Pole. This stops the larger Pole from sliding freely during shipment potentially blowing out the box end. Slipping the foam over the poles also prevents the larger Pole from slipping during shipment, protects the finish (painted), prevents the boxes from crushing when stacked by removing air space, provides a protective cushioning barrier between the poles and the fragile assembly videotape. The packaging also instructs the end-user/consumer in assembly, saving costs associated with customer service.

Landscaping:

The JumpCourt system can also be used as a trellis for growing different plant materials such as ivy, to hide or blend the JumpCourt into the surrounding landscape (sometimes required by local planning ordinances), to provide shading for users, to protect the court and trampoline from UV damage, to provide a wind break, to provide a privacy wall (especially good for those who appreciate the opportunity to enjoy the great outdoors in their birthday suits).

Top and bottom strapping woven through net.

Because the extruded netting is practically inelastic it would be impractical to stitch a more elastic flexible cord or strap to the netting. The difference between the elasticity properties of net and strap would generate excessive sheering forces on the stitching during impact leading to premature or failure of the stitching. The JumpCourt system allows both strapping and net to coexist because the strap is woven through the net and not stitched in place-- allowing the two to move at different rates and yet to conform to the forces that each place on the other during an impact.

Method for installing the JumpCourt on trampoline where connecting the JC poles to the legs is impossible or undesirable (may be used at leg connections).

Attach the JC Pole to the trampoline frame. Place a can (approx. 1ft. deep by six inches in diameter) or dig a hole in the ground directly beneath JC Pole connection to the trampoline frame (the can/hole may be moved in or out to adjust the angle of the JC Pole). Now place the end of the JC Pole (pole extension--elastic, flexible, or inflexible--may be added if needed) into the center of the can and fill the can with rock, sand, rubber, cement, or any medium (can be layered) to vary the shock absorption ability of the poles. This installation technique allows infinite variation of pole placement around the trampoline.

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Different methods and for mounting the poles on the trampoline frame.

The JC poles can also be mounted at the inside of the trampoline frame. In this configuration the existing padding would need to be notched to prevent the padding from being pushed inward thus exposing the frame.

The double U bolt connection can be used to connect the JumpCourt pole in line with the leg of the trampoline or at any location along the trampoline frame. The lower U bolt connection can be used to connect the JC pole in line with the trampoline leg or at any location along the horizontal leg section providing that it is at least one inch above the ground.

Other methods we have used include the following.

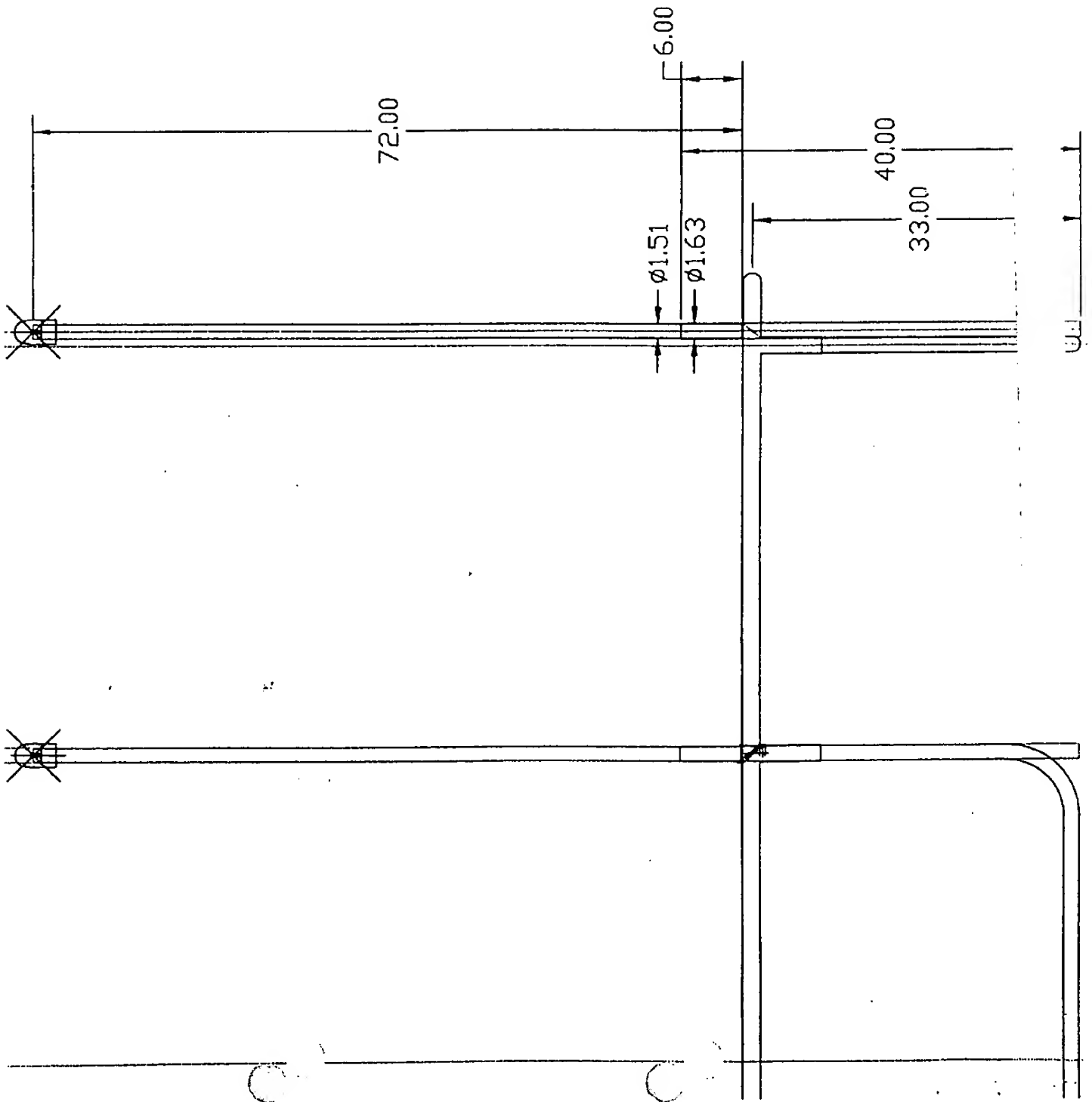
A simple shock cord connection at the top which allows the JumpCourt pole to move when impacted. Best used for lighter weight individuals and children and allows for less pole padding as it provides a flexible connection in contrast to the hard U. bolt connections. The shock cord holds itself in place under tension using a simple loop at one end and a ball at the other end. The cord is wrapped around the JC pole and the trampoline leg and then crosses itself at the top of the trampoline frame as he wraps around the JC pole where the ball is slipped through the loop while under tension. This kind of elastic connection is not recommended for large or heavier individuals as explained in this patent.

The use of plastic ZIP ties with non-release or releaseable connectors makes for an inexpensive and quick connection but without the durability of steel or the elasticity of the shock cord.

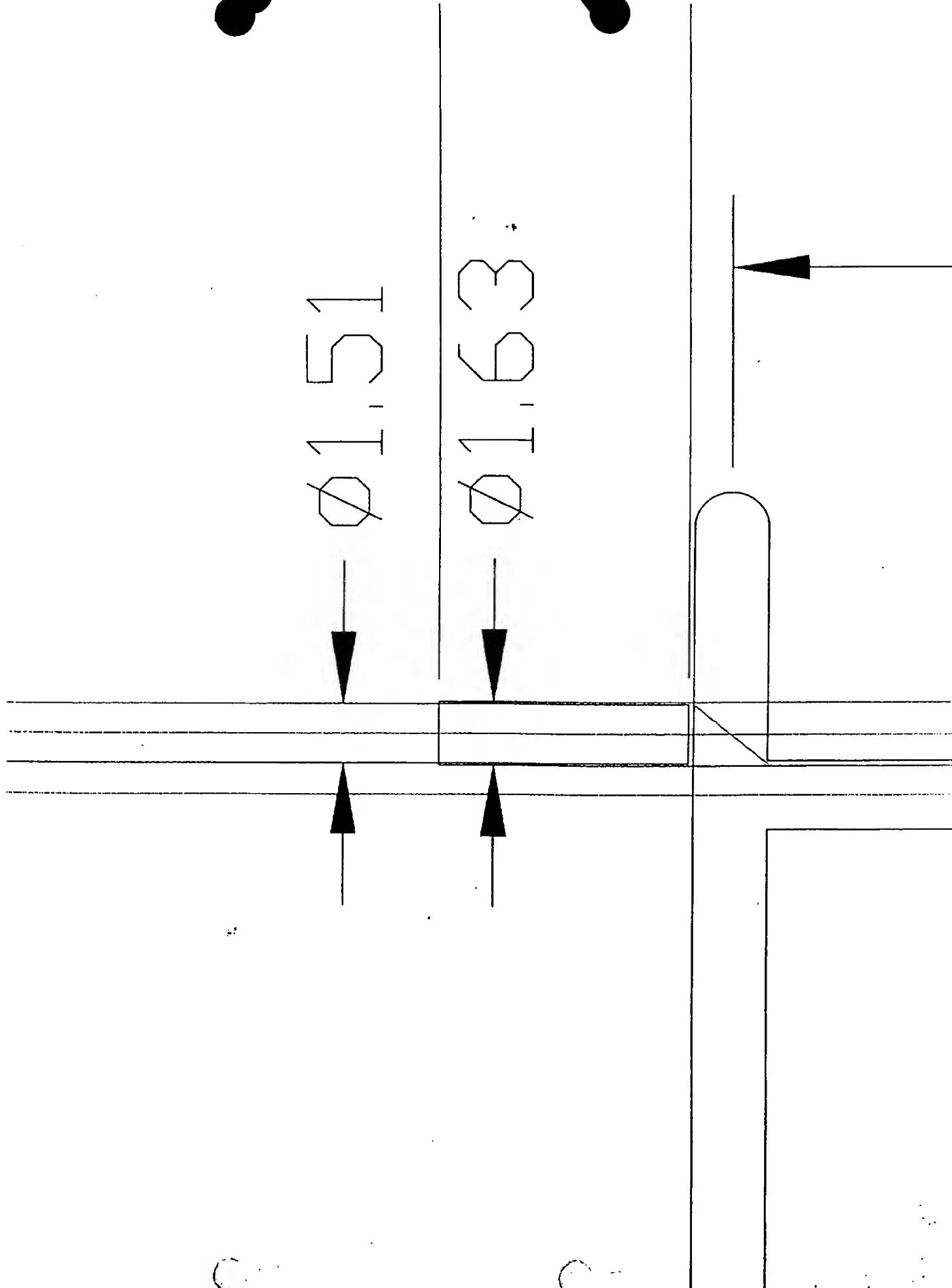
Screw adjusted hose clamps can also be used for a quick more durable connection but without elasticity unless a rubber or other shock absorbing material was placed in between the pole and the clamp.

We have also designed several wire form clamp configurations with quick release connectors similar to those used on glass jar lids that use rubber gasket's to seal. Some of these connections incorporate springs allowing the JC pole to move upon impact.

FIGURE 2.2.2.2



1.05000 6.44000



Drawing 02179801
End Cap

Ball top fits inside skirt bottom of another End Cap, allowing male-female nesting for reduced packaging volume
Ridge at top of neck to prevent movement of Support Pole into top of ball during assembly or upon impact, and positions End Cap and Upper Support Pole so mating holes line up for easy assembly
Skirt diameter sized to accommodate two sizes of padding thickness while deflecting rain at padding end
Rounded surfaces to prevent injury

Drawing 02199801
Webbing

Flexible woven material to move under tension adding third level shock absorption
Flat surface to distribute load evenly against mating materials (foam, net) on all sides and under insulation rotation
Maintains load distribution when load vector changes direction as webbing unrolls
Soft flexible material does not injure upon impact

Drawing 02199802
Bungee Assy

Elastic material for secondary spring/net suspension and impact absorption
Elastic connection to trampoline frame for energy absorption
Insensitive to tolerances of mating parts
Self tensioning within design range for ease of installation
Soft flexible material does not injure upon impact

Drawing 10219702
Lower Support Tube

Slip-fit to mating pole for packaging
Rounded surfaces to prevent injury
Sized to allow attachment to smaller diameter (shorter) trampolines

Drawing 10219703
Upper Support Tube

Slip-fit to mating pole for packaging
Rounded surfaces to prevent injury
Sized to deflect under impact and absorb energy

Drawing 10279704
Foam Tubing

Soft flexible material does not injure upon impact
Flexible material acts as fourth spring for distributing load due to direct impact or tension of webbing
ID larger than OD of pole acts as pivotal bearing allowing impact force to be transmitted and absorbed over primary and secondary poles (allows "unreeling" of net)

Drawing TC-0009

Upper U-Bolt

Threaded fastener allows attachment of TC to legs of different diameters
Clamp and U-bolt allows pivoting and rotation of poles to transmit and absorb forces by primary and secondary poles

Drawing TC-0010

Lower U-Bolt

Threaded fastener allows attachment of TC to legs of different diameters
Clamp and U-bolt allows pivoting and rotation of poles to transmit and absorb forces by primary and secondary poles

PF-9710001

Net

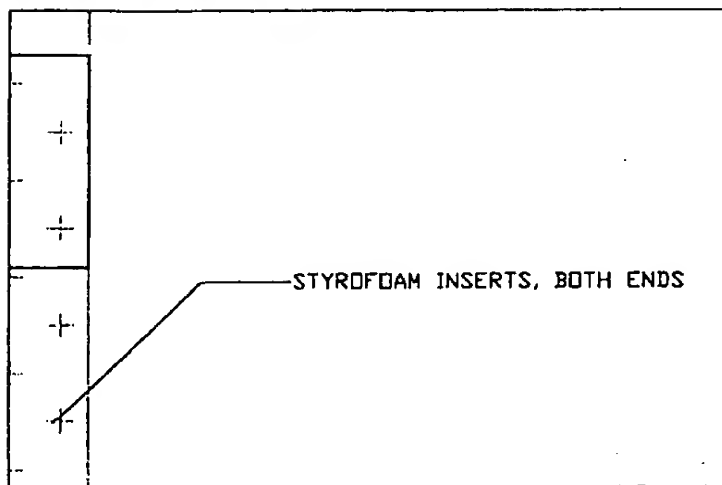
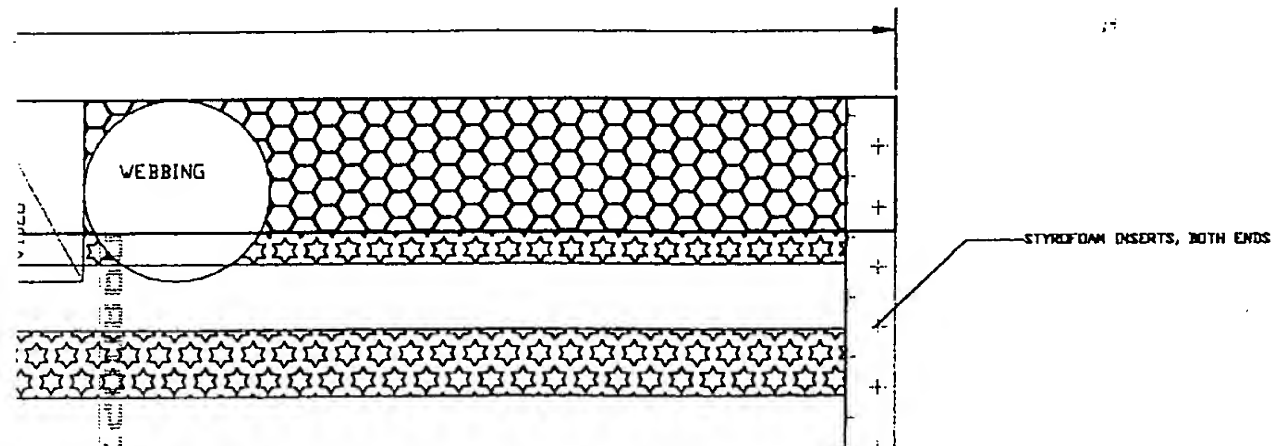
Extruded fiber cross-section not conducive to climbing misuse
Polymer extruded fiber construction acts as primary shock absorber

General

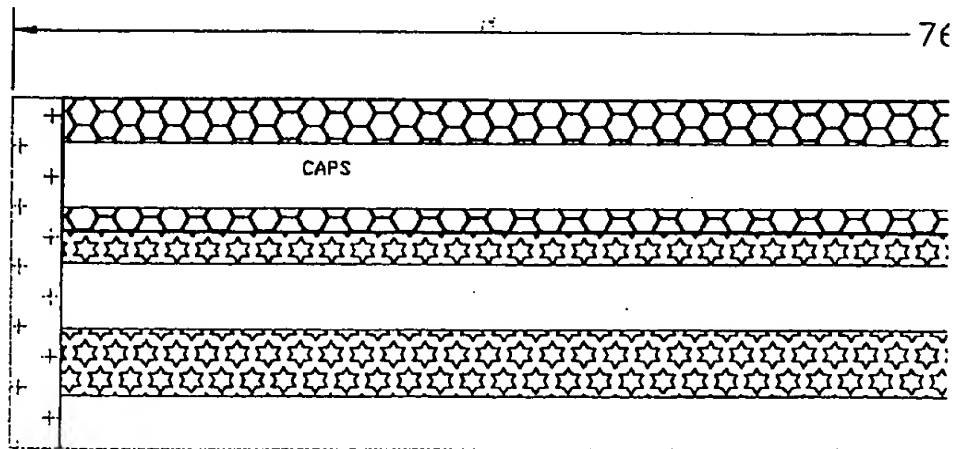
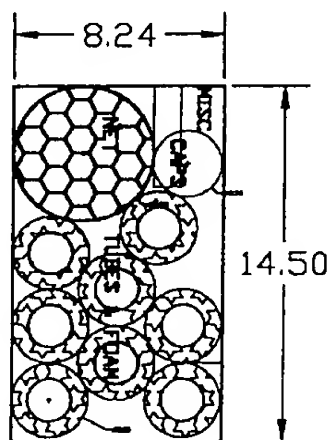
Cantilever mounting of poles to trampoline legs uses deflection of poles upon impact to absorb shock
Top and bottom webbing constrains and distributes pole deflection
Lower webbing constrains and synchronizes net deflection with trampoline bed movement
Lower webbing restrains spring cover pad and keeps in place
Tunable net suspension spring rate by changing the number of "barberpole stripes" of webbing around foam

FOR RELEASE TO THE PUBLIC

REVISIONS				
ZONE	REV	DESCRIPTION	Date	APPROVED
	1	PRELIMINARY	3/11/98	JSP
	2	REVISE FOR 2-3/4' FOAM	3/16/98	JSP
	3	3' FOAM LAYOUT=LARGE NET	3/25/98	JSP
	4	ADD NOTES	5/19/98	MVP



PART NUMBER		DESCRIPTION	
SPECIFIED:		JUMPSPORT, LLC	
MATERIAL:		(408) 866 3120 / (408) 866 3124 FAX	
FINISH:		PACKAGING, BOX	
DRAWN BY:		INSIDE DIMENSIONS/LAYOUT	
B. LOU	DATE:		
	3/11/98		
ENGINEER:	DATE:	SIZE	DWG NO.
B. LOU	3/11/98	B	12049701
CHECKED BY:	DATE:	REV	
JSP	3/11/98	3	
SCALE		Scale FULL	Sheet 1 OF 1



Notes:

1. Packaging configured to save space, protect pole finish, prevent box from easily crushing, minimize packaging inserts, reduce material movement inside the box, reduce shipping costs by reducing overall package size.
2. Upper Support Pole slip-fitted inside Lower Support Pole. Both slipfitted inside Foam Padding. Stacked steel poles prevent stacked boxes from crushing lower boxes and foam tubes during shipping, allow for lighter box material with less reinforcements and inserts. Foam protects surface finish of poles and frictionally prevents shorter pole from slipping and punching out box end.
3. Caps fitted male-female in single stack to reduce dead box space.

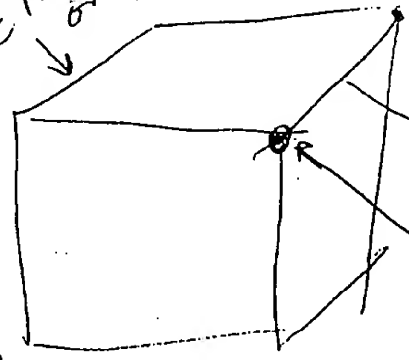
DASH	ITEM
UNLESS OTH	
ALL DIMENSIONS /	
.X	+/- 0.03
.XX	+/- 0.015
.XXX	+/- 0.001
ANGLES	+/- 1
MACHINED FINISH	
BREAK ALL EDGES	
CHAMFER ALL HQL	
ALL WELDS FULL	

DO NOT

Spray speeds
up by using
a valve that
increases automatically
thus speeding up
turning spray.

SPRAY

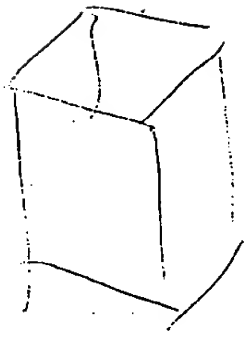
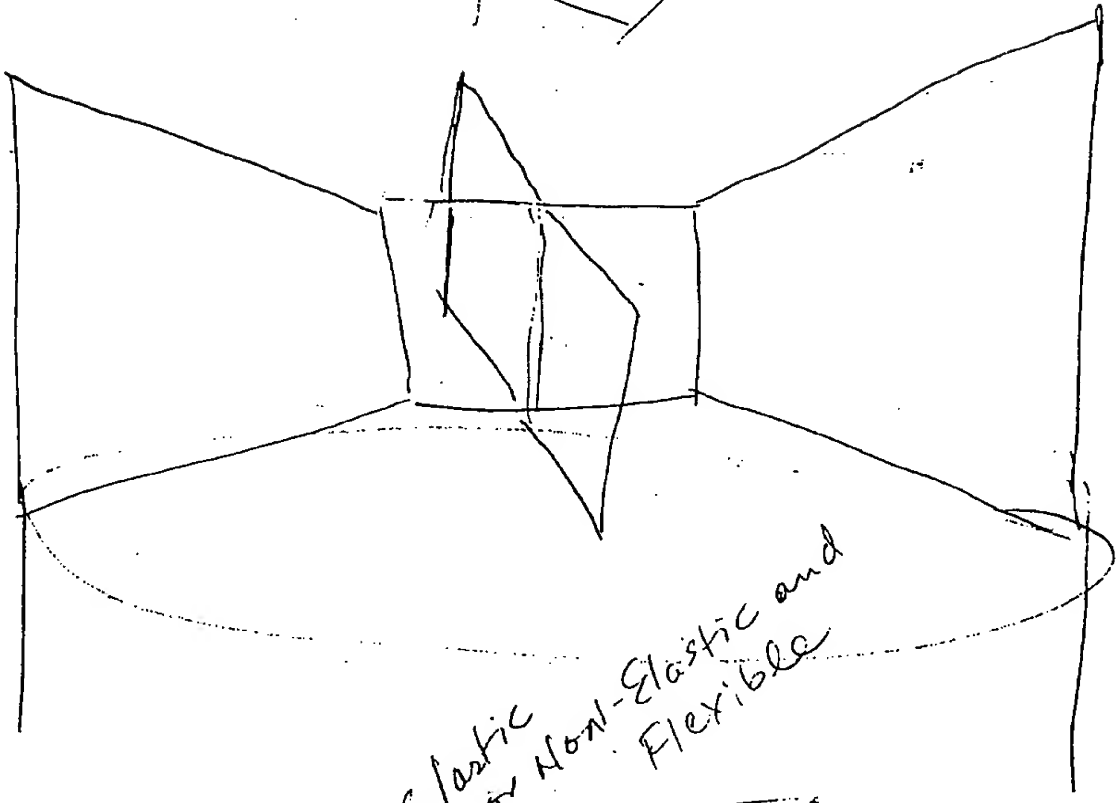
Elastic
or Non-Elastic and
Flexible



Suspended
Centered

Plastic
Elastic

Valve opens or it
screws out for some other method
when shut off from outside
multiple heads for
diff. spray patterns
James



or single larger head which has clock-like
screw-in-out valve that actuates diff
spray patterns.

Claim AU types of Elastic ^{cord} over
an elastic ^{rebound} surface.

Claim water stream generating devices
under/over rebound surface used to
play games

Canopy

OUTSPORT PRE-SCHOOL PARK
HANGING BALLS LABELED W/ NUMBERS,
COLORS, ALPHABET, STATES ...

GITTER W/ PATTERN ON RED OR PINK
(CLOCK PATTERN, N-S-E-W, WORLD,
NUMBERS, ANIMALS

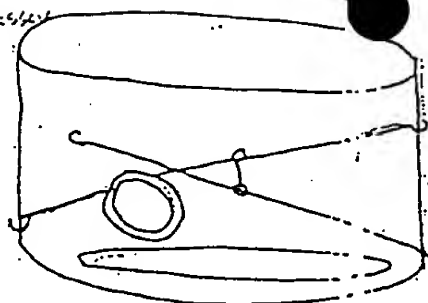
PATTERN ON BOTH SIDES
ATTACH W/ BUNGEE &/OR VELCRO TO RED,
WHITE - SPRAY TO DISSIPATE BALL/REDUCE
FALLTIME & SILENCE ALL
HARD SURFACE TO ATTACH VELCRO
ONE SIDE

GITTER PIRLS

GROUNDING STRAP TO GATE SILENCE
CHANGE GENERATED BY FALLTIME

Tramp Chace - Donald Strasser

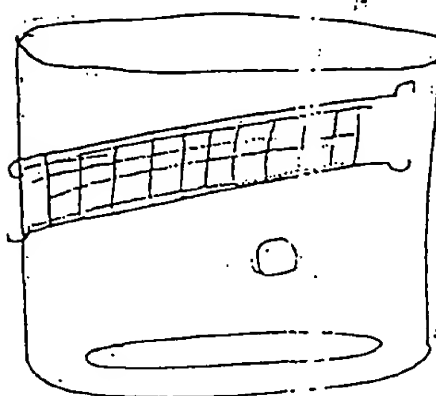
- Players start in diagonal quadrants. At least two cords are stretched across court, and hoops or other obstacles may be attached to them.



- Someone says go, and all players race around in the same direction, either over or under each of the cords, while the players have determined. Player wins by catching to and tagging his opp.

Tramp Ball - Generic

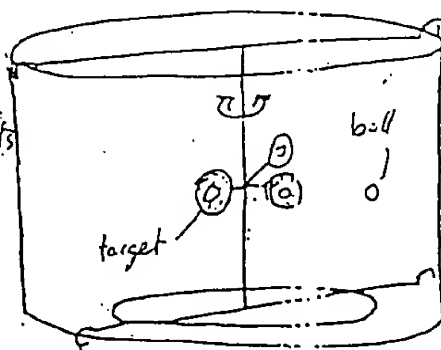
- Players are on either side of net stretched across the court. Net is placed higher for more challenge. Ball is soft Nerf-type about the same size as a soccer ball.



Players throw or hit over the net. If opp misses ball and hits back must punch of the a point is scored. Oppa has one bounce of his on the trampoline orles catch ball and throw or it back to the other

Tramp Shot - Donald Strasser

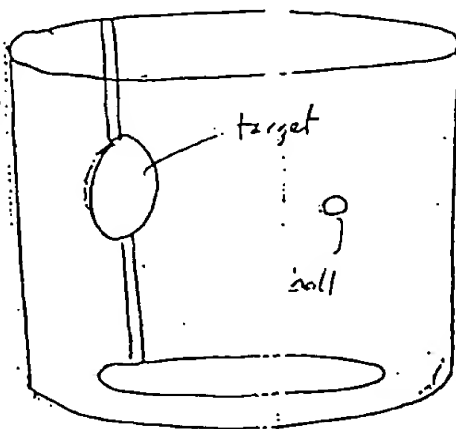
- 2 Bungee cords stretched across the court, one high and one low, suspend the "target". Target consists of three disks which may rotate. Small, soft, bouncy Nerf-type ball about 4 in dia is used.



- Players may move any where in court. serves by hitting ball at the target, missed the opponent ge point and the serve. ball hits, the opponent 2 or three bounces of ball on the trampoline the ball and throw it to the target

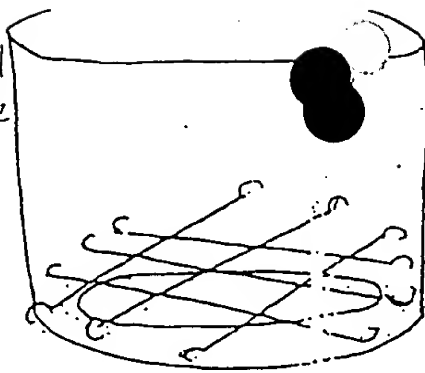
Tramp Back - Donald Strasser

- Players start anywhere in the court. Target is a large (3' dia) plastic disk mounted securely against one pole. Ball is small, soft, and bouncy but lightweight pneumatic-type plastic ball, about 4 in dia.



- Players may move in the court. One se by hitting or throwing the ball against the Opponent has one of the ball against trampoline to catch ball, and may only one step before th at the tar

- Tramp
- Many cords are criss crossed across the court at the same or varying heights

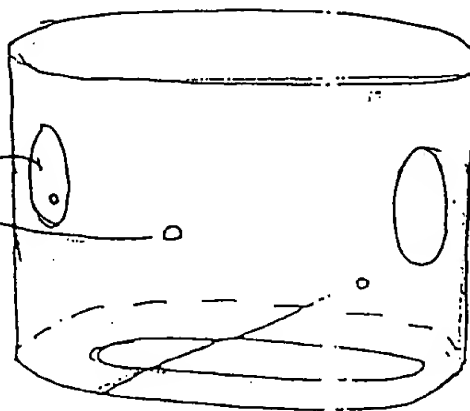


- Players must jump one square to another a player-determined. For more challenge, may not touch any cords when making jumps

Tramp Pass

- Mark Publisher

- 2 circular targets (3' in dia) are securely attached to opposing poles in the court. Each is covered with the hook side of Velcro fastener. A small, soft, ^{medium} weight ball is covered with Velcro loop fastener. A cord along the surface of the tramp separates the two players.

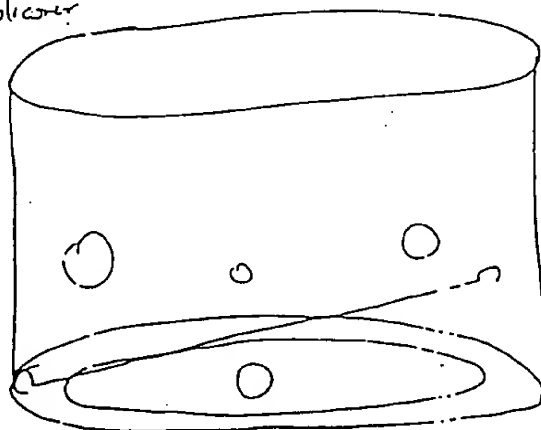


- Players throw the the opponents target the opponent tries to block or catch the point is scored if the sticks to the target. the opponent has to he can throw the ball at the other target more challenge else balls

Tramp Tag

- Jacob Publisher

- 3 to 8 balls of varying or equal size and bounciness are used.

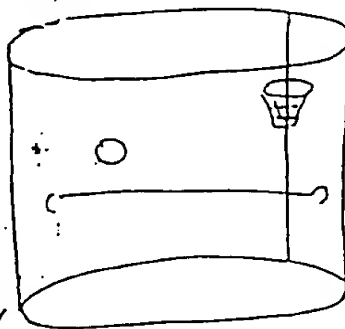


- Players bounce a the court in any dire. They start with 1 losing one each time a ball touches then last player left with wins. Once a player out he leaves the c more challenge, use stretched across the obstacles.

Tramp Basket

- Donald Stasser

- A Cord is stretched across the court at below waist height. A small basket with a net is securely attached to one pole. A soft, bouncy net type ball that can easily pass through the net is used.

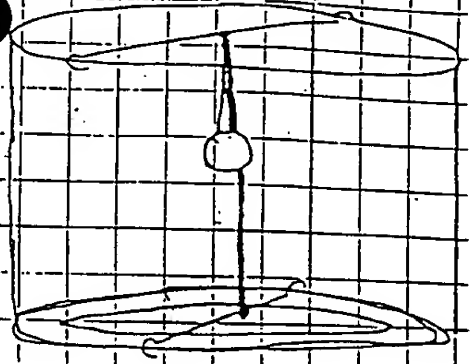


- Players either take turn a predetermined number times and the one with most baskets wins. a half court game can be. In the half court game, player on offense shoot behind the cord. The p on defense may not fend.

Leather Trap I

- Donald Shesser
- Mark Publicover

The ball is suspended from above the court by a bungee cord. A cord also extends from the top cord down to a cord across the bottom. The ball is a medium sized, bouncy, light weight plastic ball.

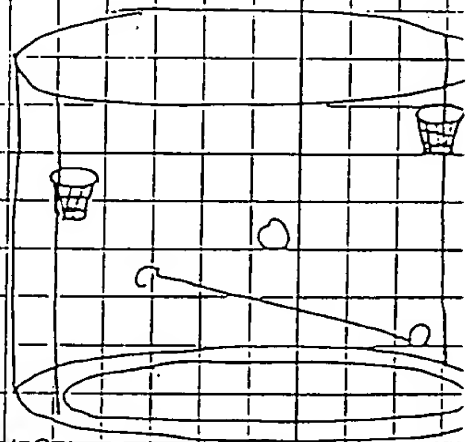


Each player is in one half of the court as marked by the lower cord, and remains there the entire game. A player wins by hitting the ball until it wraps tightly and completely around the vertical cord suspended in the center of the court.

Tramp Duel

- Mark Publicover

Two nets are securely attached to poles located across from one another. One cord runs across the court at below waist height, dividing the court into two halves, with the nets at the back of each. The ball is medium sized and soft.

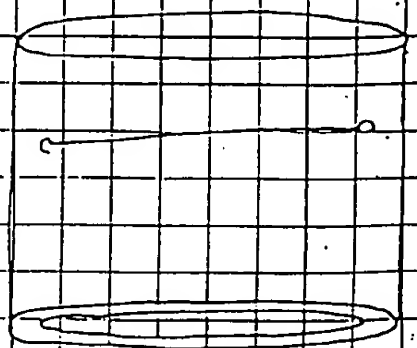


Each player remains in his half during the entire game. Points are scored when a player makes a basket. The defender may block a shot, but may not go after.

High Trap

- Donald Shesser

A cord is stretch across the net, starting out at waist height.

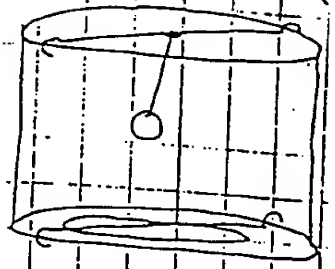


Just like the high jump, each player attempts to jump over the cord from one side to the other without touching the cord. Each player gets three attempts to jump each height. If both succeed, the cord is raised. The player to make the greatest height wins.

Netter Tramp II

- Mark Publicover

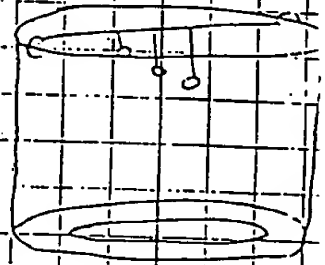
Similarly to Netter Tramp I, the ball is attached to a cord which is suspended from an overhead cord. The object is to throw the ball around the horizontal cord. Each player tries to wrap up the ball in opposite directions.



Tramp Touch

- Donald Strassen

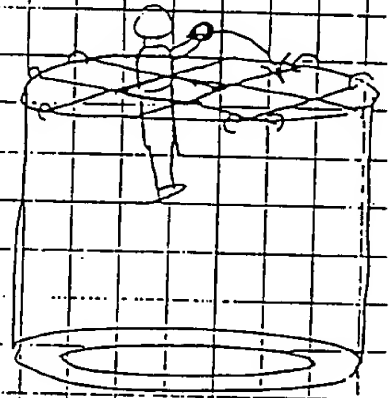
A cord is stretched across the court. From it, balls are hung at graduated heights. This allows small children the challenge of jumping up at hitting them at progressively greater heights. They can see if they really did touch or not because the ball will be swinging. For greater challenge with larger kids hang the balls from the upper part of the Tramp Brella pole.



Tramp Throw

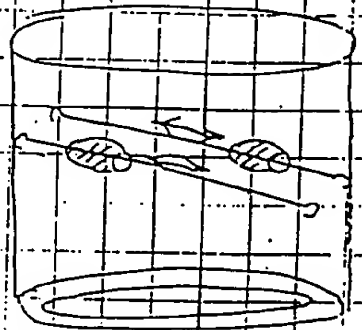
- Mark Publicover

Cords are stretched in a grid across the top of the court. Game is played by jumping up through a certain square and throwing the ball down through another specific square.



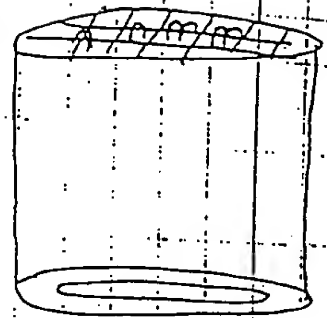
Tramp Slide - Mark Publicover

Each player attempts to slide one of two soft "buoys" across to the other side of the net. If it hits the other side without the opponent blocking it, the player scores a point. For additional challenge, a cord separating the two buoys for both players can be added. This requires the players to jump over the cord to get between the two buoys.



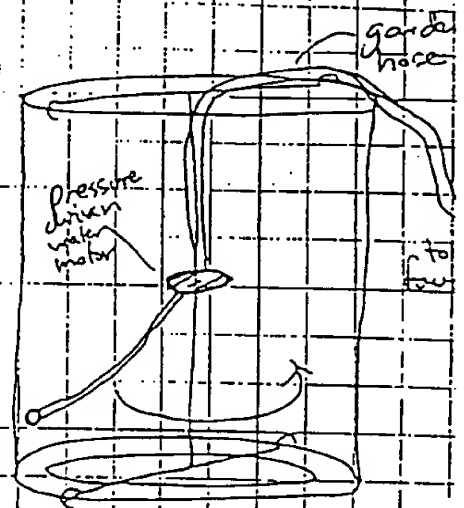
Tramp Hook - Mark Publicover

Each player has a different colored set of "hooks". The grid at the top of the cart is divided into different sections, and they score by putting their hooks in their color coded spot for each section. Each player is in a separate section, and they rotate when one completes his section.



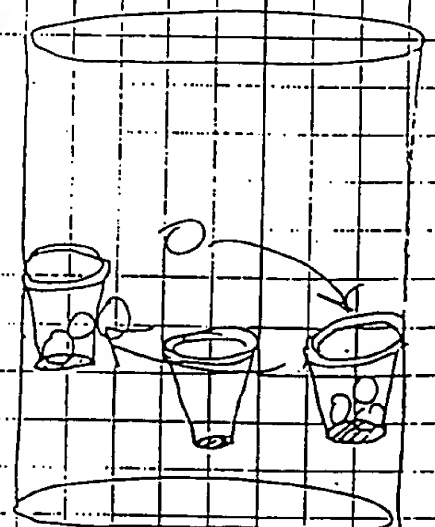
Tramp Jump - Mark Publicover

An ordinary garden hose is attached to a water pressure driven motor suspended in the center of the court. Attached to the motor is a soft rubber foam rod with a soft weight at one end. The motor turns the foam rod around the cart, and the exiting water splashes around the cart. Players avoid the foam rod by jumping or ducking. Its weight may be varied.



Speed Ball - Mark Publicover

2 Players have 2 different colored sets of balls, and a matching colored basket. They race to grab balls of their color (only one may be carried at a time) out of the center basket and put it into their own. Variations can be played with no center basket, or with players stealing or blocking each others balls.



Entry completed

on a strasser

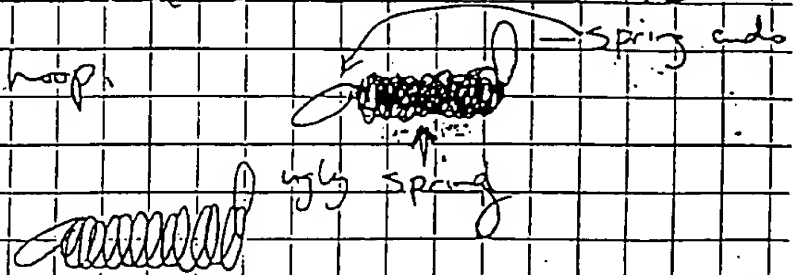
1

Notes (Continued):

Hip Hop - Coined of around a month ago, this game calls for one hoop or a number of hoops attached to the participants' hip. The participant bounces on the trampoline, causing a ball to bounce off of the hoop.

The participant has jump & move to score the ball through the hoop. For two players, the hoop/hoops are attached at the waist & the player try to shoot (using hands) the ball into their opponent's hoop(s).

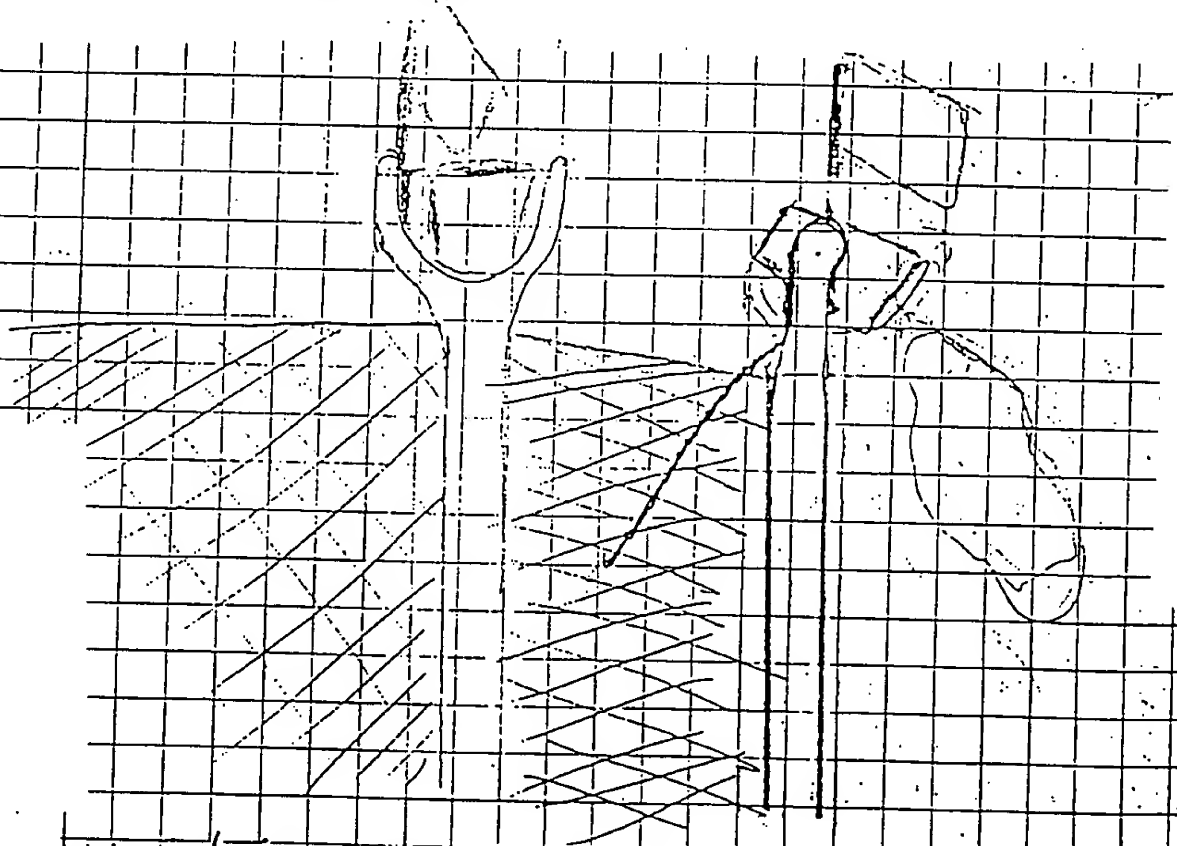
Name Hoop - A hoop was made out of plastic would be attached to ~~the~~ a jumpcourt post. The hoop would be durable and ~~can~~ be spring loaded so that it will spring back to standard/normal position after being hit (Spring-loaded breakaway hoop system). Sp. would be internal and ~~be~~ run horizontally through the hoop.



#2)

Castle Siege

Castle Siege- The player on the trampoline is defending his or her castle from attack. His weapons are buckets on each post (a.k.a. Castle Caldrons) filled with water that he can capsize onto the players outside if they get too close. Participants on the outside are trying to "seige the castle" by knocking the castle flag from where it hangs proudly using bean bags/foam balls. The individual who captures the castle then becomes King or Queen. The current "King" must block/capture the beanbags, and if he secures them all, the game ends (and he or she will continue to reign). It takes bravery -but watch out, if the King/Queen hits you with water, you are put into the dungeon until the kingdom falls. One way tool that the "seigers" have are shields to defend them from the water. Bungipults (a.k.a flingerthingers) may be used by participants outside, sending in water projectiles (water balloons) or by the King/ Queen to weaken the attacks of his/ her enemies.



Variations Flags are mounted to each post, and the Kingdom is claimed only when all of the flags are knocked down. The flags are velcroed to each flag post so that they may be attached

easily also so that only the
material falls.

Installation: In the place of flags,
a small net pocket made of netting
would be the target mounted over each
"Castle Children" when each pocket
contains a bean bag or splash ball, the
kinder would be successfully conquered.

Design/Configuration: A small bucket is
mounted to each post, (secured on two
sides to a "Y" that runs that is mounted
to the post so that it may pivot).

The bucket has a cord secured to the
outside portion of the bucket. When pulled
the bucket tips outward, ejecting the
water contained in it.

Water is fed to the buckets
from a single garden hose attached to
a ~~reverse double~~ "splitter". Tubes are
attached to the splitter in " "

Soakerball (or spongeball)- Players on the outside could dunk foam balls into a water bath, and send it in to the JumpCourt.

Cord Games

Orbital Jump Rope- Rope will either be adjustable in lengths for single/ multiple play, and can be attached to the JumpCourt posts

Bungi cords are attached in a gridlike fashion to the top of the JumpCourt posts. The individuals on the outside have bungi bouncers (with hooks) that they are sending into the the JumpCourt, and gain certain points for entering the different holes.*

Cord tag- A cord is attached to one JumpCourt post, the other side is secured to a cord running perpendicularly which has ends that participants on the outside can pull back in forth. The cord attached to the post can move (and may have a ball attached to it); the object of the game is to tag the person on the inside with the cord while he/she is jumping to avoid it. Once tagged, the players switch.

High High Jump.- Player can adjust the height of the obstacle they must jump over.

Mirror, Mirror- Two players play this game at one time, one is the "person," and the other is the "mirror." The tramp Court is divided into quarters (or sixths, or eighths) using jump cords. Every good mirror gives a perfect reflection.... if the person jumps right, so must the mirror; if the person does a one-eighty, so must his or her mirror; if the person pulls a 360 to cord straddle, so must the mirror. This is a game you are actually trying to "break your mirror." Three breaks, and its your turn to be the mirror.

One hoop is suspended in the center with a bag/attached to it. Play
or bounces around on bed to bounce the ball into the
hoop without using their body directly. Hoop is raised for greater
challenge.

A variation on this game would be to have players inside defending
the goal, while players on the outside make shots. The participant
the outside earns points by successfully putting the ball through the
hoop (perhaps only if the player on the inside does not catch the ball
before it hits the ground).

Ball is used with a hoop that is just slightly larger. The net or bag
beneath the hoop does not allow the ball completely through. This
increases the challenge and the demand for accuracy.

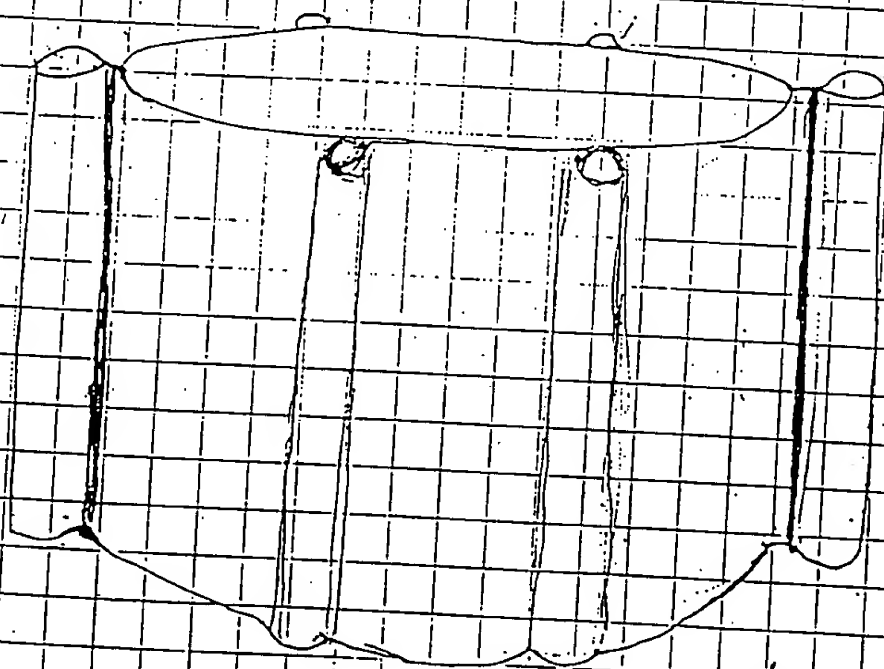
Variation: One player is in the hoop
and other players are outside with ball
(preferably pneumatic). The player
the inside must ~~give~~ complete one trip
'around the world' jumping through each side
without touching the cord. ~~and jumping~~
~~into the hoop~~ After the player
make the trip 'round the world' he must finish
the game by jumping into the hoop. Meanwhile, the
players on the outside must shoot a ball into the
hoop before the inside player has finished the game.

Installation

Post Configuration:

PVC or flexible tubing could be used in conjunction with steel post, placing the pvc tubing on top of the steel posts, or making every other post alternate between the two materials. (e.g. steel post/pvc post/steel post/pvc post)

Utilized design: Softer Springs/bed, better padding, etc.) Safety fence.



Fence is made out of woven fabric, (polypropylene / polyethylene) folded and stitched ~~sewn~~ down the width (vertically) to be slipped over the posts to anchor it in place.

Webbing is so
to folded fabric for
Strength.

Fabric Spacing

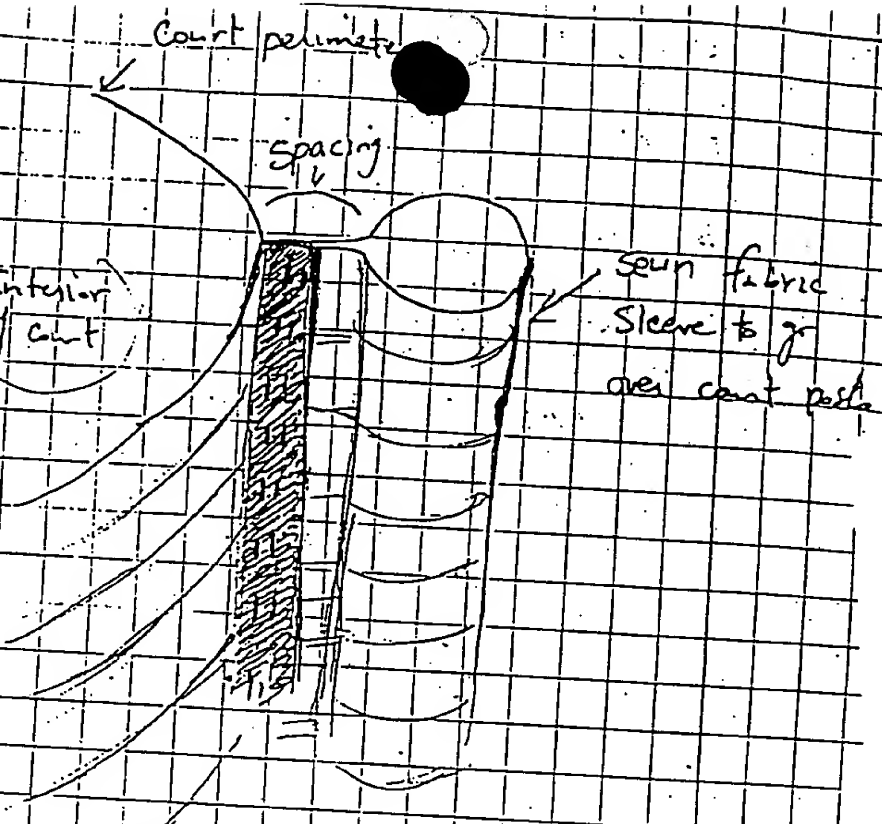
exists between court perimeter
and post sleeve so

that: 1) Impact into post
is reduced by having
inside perimeter separated

from posts. 2) Court

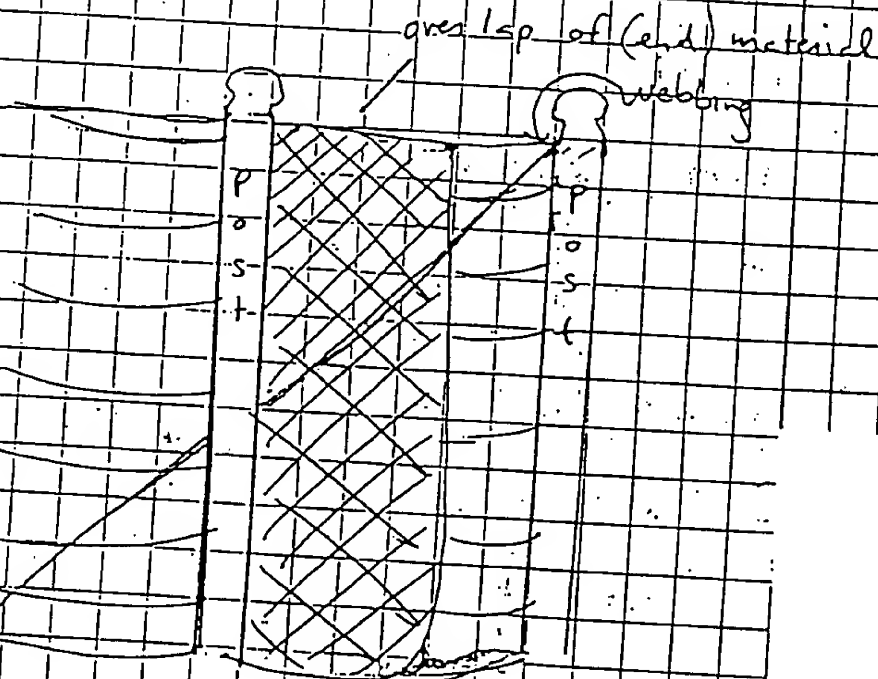
perimeter wall equal

the perimeter of the trampoline bed so that court
could ~~not~~ protect individual from the frame & or springs.



Door Configuration

This arrangement
for the door is devised
to make access easy
but to disengage
prevent an individual
from falling out even
if they don't lock.
As door closed the
way they should.



1) Door overlaps; one end is secured to post, second end
terminates within the first one.

Around 15/97 Donald Crossen built

a working prototype of the Jumpometer which we have failed to include ~~unit~~ this point. Currently he has added phase #3 to the device which is ~~phase~~ a second switch for genes using a target and a variety of settings for different elements. Phase #2 was attaching sound capabilities to the device. Currently the device has been tested and has the following qualities/capabilities

- Counts bounces on the trampoline bed (over the entire bed, and is quite responsive) record them on a digital display

- has a reset button + on/off switch

- has a second switch that records hits on a target

- has switches to select noise and which switches

it is ~~now~~ waiting (it can record bounces on the bed + hits on the target simultaneously or independently)

- it will have a countdown + a ~~device~~ device to trigger a noise on a random bounce/hit.

This device can be used for measuring aerobic + calorie burning activities as well as being utilized in many ways for genes.

Securing net/fence to the bed/frame reviewed
& verification discussed.

We have conceived and tested a number
ways to secure the netting to the frame or:

1) Cable ties attached to netting and string thru
(punctured) pad, then wrapped round the frame

(Strapping: elastic
or non-elastic)

2) Strapping (webbing) wrapped ~~round~~ around netting
and string thru (punctured) pad or wrapped around
frame.

3) Cable ties wrapped thru fence, around outside
frame and secured to spring

4) Strapping around netting and frame, without puncture
padding

5) Grommets attached to padding that strap or
cable tie could be string thru, using method
#1-2-2 (in place of grommets, clips on page 31 could be
used)

6) Grommets attached to padding, cord is string thru
it, ~~then~~ ~~is~~ string thru net, and pulled
tight (in place of grommets, clips on page 31 could be employed)

7) Same as #6, but vector wrapped around the frame
(cord is)

8) Same as #6, except cord is not wrapped
thru net. Instead, hooks are used like those
on page 30 to secure the net to the frame

9) Hook found on page 32 could be attached to
frame, and cable ties/cord/strapping could be
secured to it in place of the frame for all utilizing
methods 1-8.

1) letting cord be secured to movable
(inside of the padding or ring) w/ly elastic/non-elastic
cord / strapping.

1) letting cord be slid under padding, and connected
to movable bed (padding can be secured to frame or to net)

2) Additional padding can be secured to the
frame, using tape or strapping or cord or velcro
for protection as in the event that the pad is moved,

and secured by method #1 or #2. The

padding that come with the trampoline can be

tied to the frame as normal or to (which tends

to pop) or attached to the net so that it

can move with the impacting body.

3) before hanging the net up, connect the net

to the springs by either a) taking each spring

off, & re-attaching it putting it through the mesh

on the edge (with the bulk of the material above)

and re-attaching it or b) taking each spring off,

feeding each spring through a mesh on the edge (with

the bulk of the material below) and wrapping

the bulk of the material around the outside of the frame

(taking off each leg and re-inserting it between a mesh)

and hanging it to the post.

Post / padding / webbing / net configuration

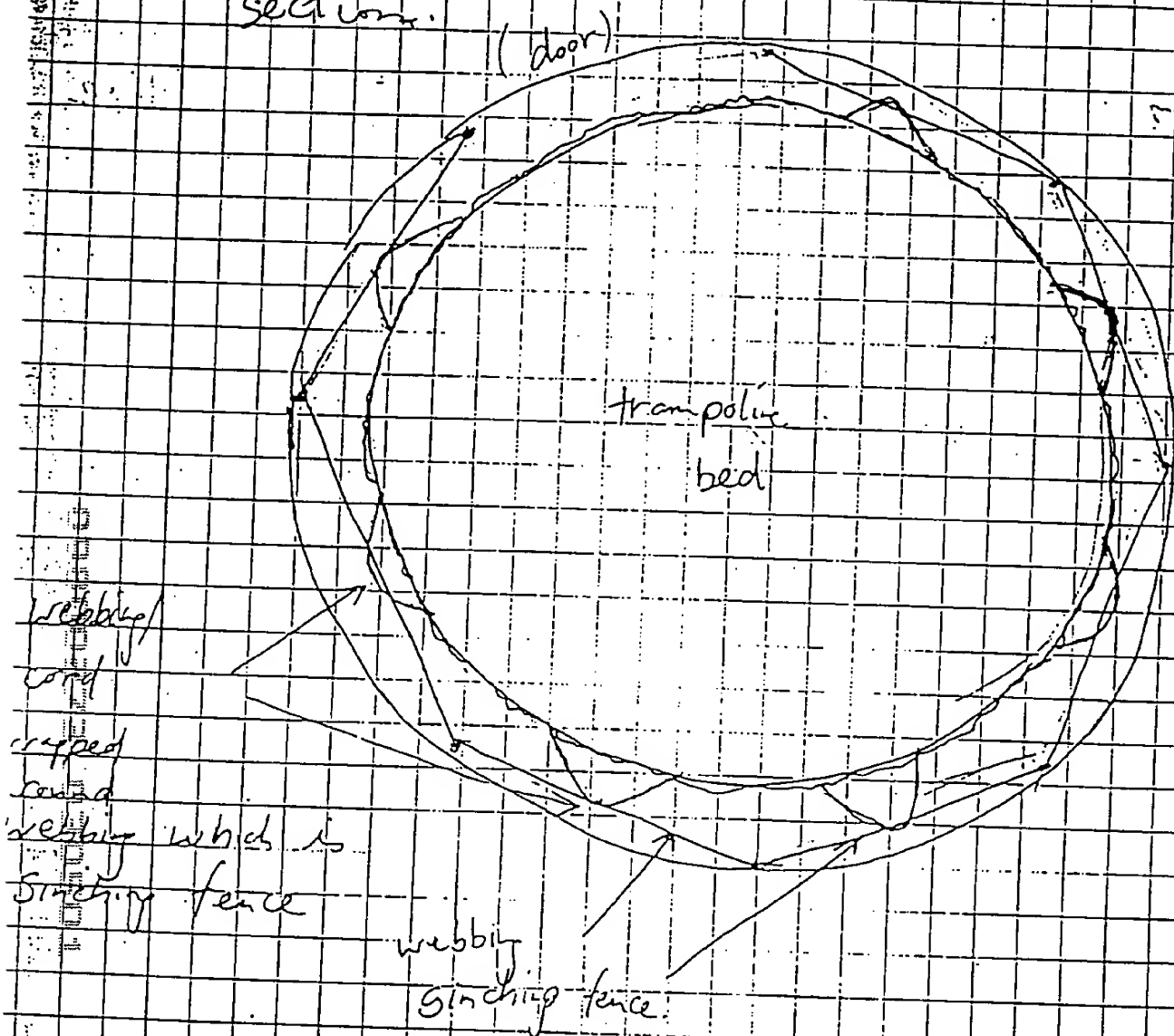
Recap: padding is stretched over the post, and elastic or non-elastic cord/webbing is wrapped around the post and through the net in a descending, spiral fashion. The padding not only absorbs energy from a direct impact to the post, but also helps to absorb energy from an impact into the net. The webbing/cord, spiralling around the post has more surface area than would cable tie, and therefore is to distribute weight better. In conjunction with the foam, this attachment of netting to the posts acts to absorb the impact efficiently. The posts, being semi-flexible also work, not only to absorb the force of an impact, but also act to rebound the body toward the center of the trampoline.

may be the fence material we are using
toward in our court design or any type of fabric
that will perform well outdoors, like those on p
44).

Securing the bottom edge of the net ramification
#14) a ramification alluded to in ramification #6 on
page 52 is to have ~~an~~ elastic/non-elastic
webbing/cord woven through bottom of net,
(cut would probably need to be made in the
fence at the posts) and fence drops below
the frame of the trampoline and is stitched
tightly.

#15) elastic/non-elastic cord is woven through
bottom edge and secured to the frame at
the posts (~~probably~~ ~~probably~~ one end is
probably connected to one post, while the
other end is tied to the seventh post
and the cord/webbing is pulled tightly, for
seven sides of an octagon inside of the
of the trampoline. Elastic/non elastic cord/webbing

is secured to the web and the
trampoline bed in at least one place between each
section.



Ramification to webbing/cord configuration found on
page 6.

Have webbing/cord woven vertically
through let at posto. Using the "Candy strip"
(spiral) configuration, attach the webbing/cord
to the vertical webbing/strapping.
This design distribute the weight of an

5/22/

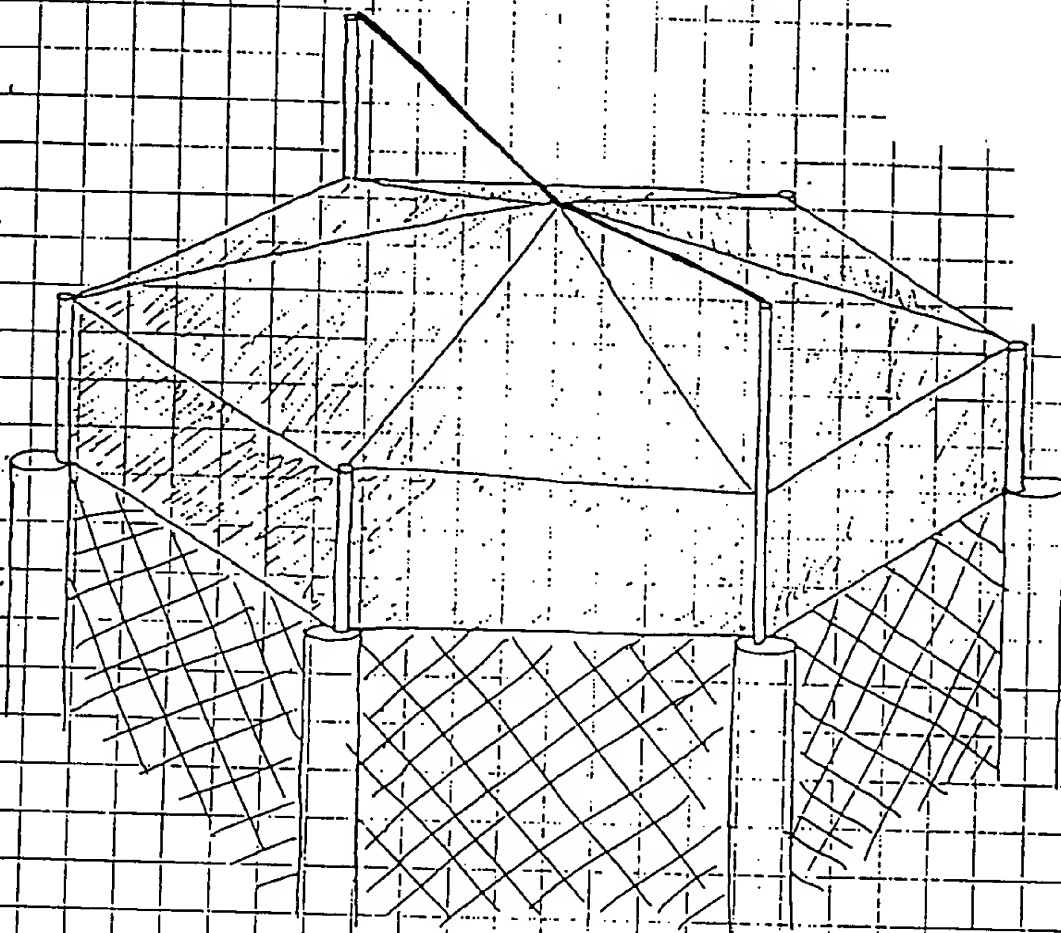
The arrangement could be a variety of combined

Vertical Weave	Webbing	webbing	bungee	bungee
Spiral Candy Stripe (or "O" ring)	Webbing	bungee	webbing	bungee

↑
 "O" rings could be used in place of candy stripe configuration.

Tramp Brella

Purpose: Same as Trampbrella II



Description: Short (about 3 ft) poles are attached to all but two of the tramp court support tubes. Two long poles (about 5 ft) are attached to the remaining tubes. A line runs between the two tall poles and is attached to the covering. The covering runs down to and is attached to the top of each of the small poles.

Construction: PVC plastic, or fiberglass for the poles. Netting, Canvas, tent, or awning plastic for the covering.

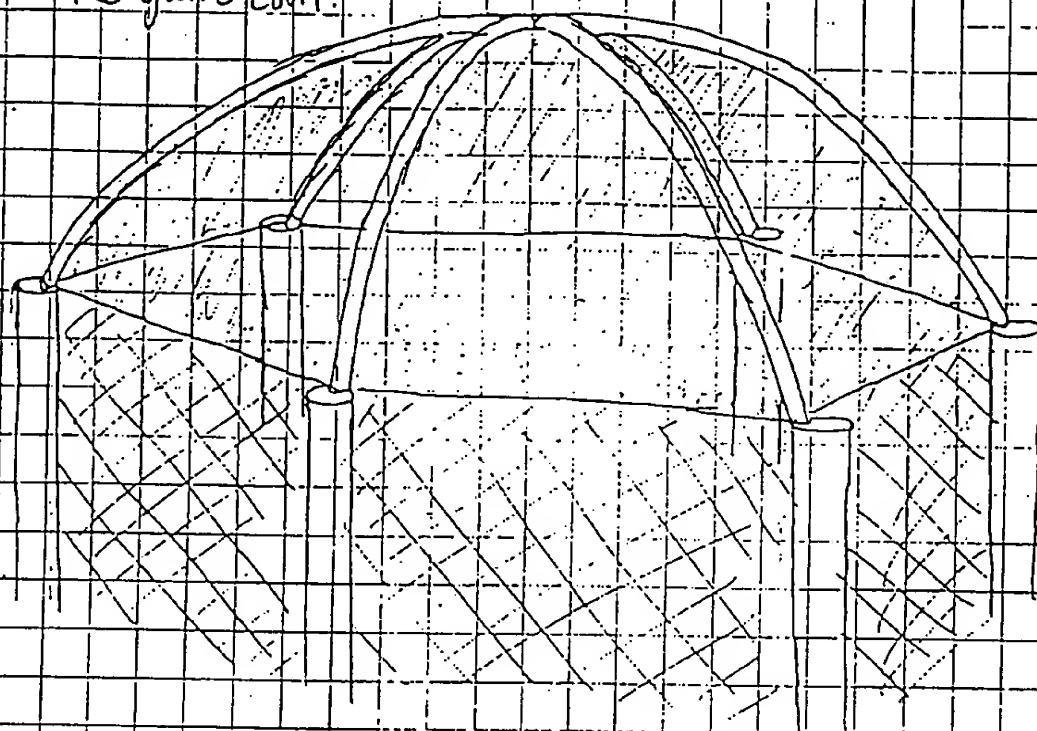
Advantages: The court is completely enclosed. The covering is raised to a height where it doesn't restrict jumping anywhere within the court.

Tramp Brella

Edith

Purpose: To provide shade, shelter, and sun protection over the top of a trampoline equipped with the tramp court. It may also be used to attach overhead games, (such as Tramp Touch). It ^{also} contains balls, for use with the game court.

Design:
Donald Str.
Drawn:
Donald Str.



Description: Tent type poles are attached from the top of each vertical support tube and go to either an attachment piece at the center (as shown above) or all the way across to the opposite support tube (overlapping at the center). The design for the 6 support tube model is shown above. A covering is stretched between the poles.

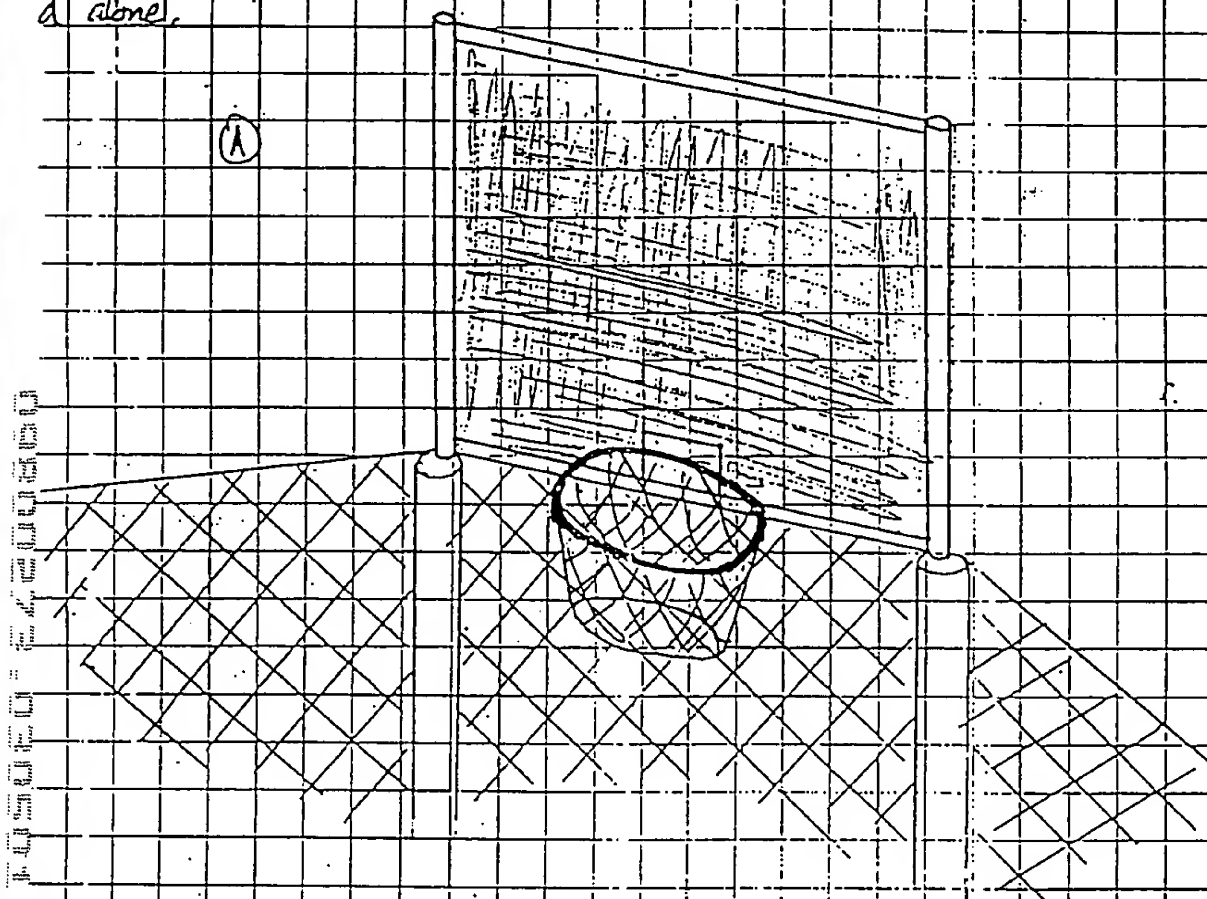
Advantages: Aesthetics - The design is simple, clean, and fits well with the tramp court configuration. Because of the curved supports, maximum overhead clearance is achieved in the center of the trampoline, where it is most needed. The frame is strong enough to support lightweight game attachments.

Construction: Either fiberglass or aluminum tent-type poles for the supports, with ^{netting} canvas, tent plastic, or awning plastic type covering.

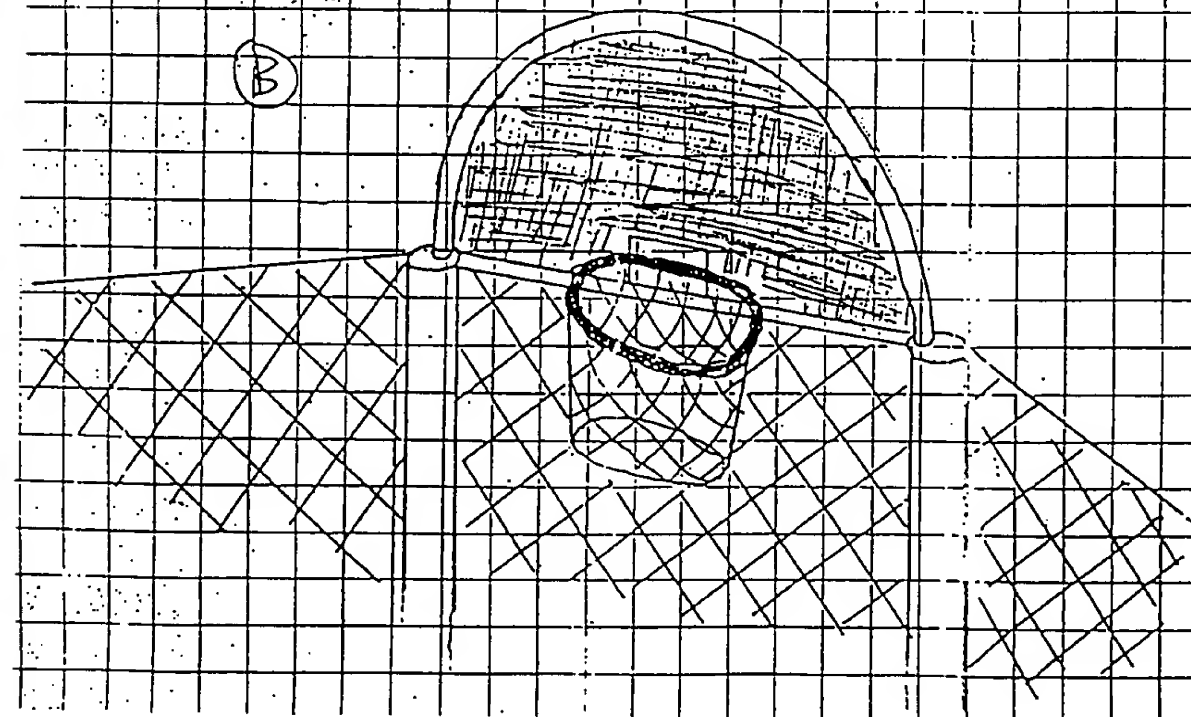
The purpose is to provide a back board with a basketball-type hoop and net which attaches to the port poles of the ramp Court. The back board is a sturdy, weather resistant plastic or finished wood. Integral, separate tube supports are located around the outer edges, shown in versions A & B. The hoop can be disconnected so that it not interfere with jumping and so that the back board can be done.

Drawn:
Donald Strasser

(A)



(B)

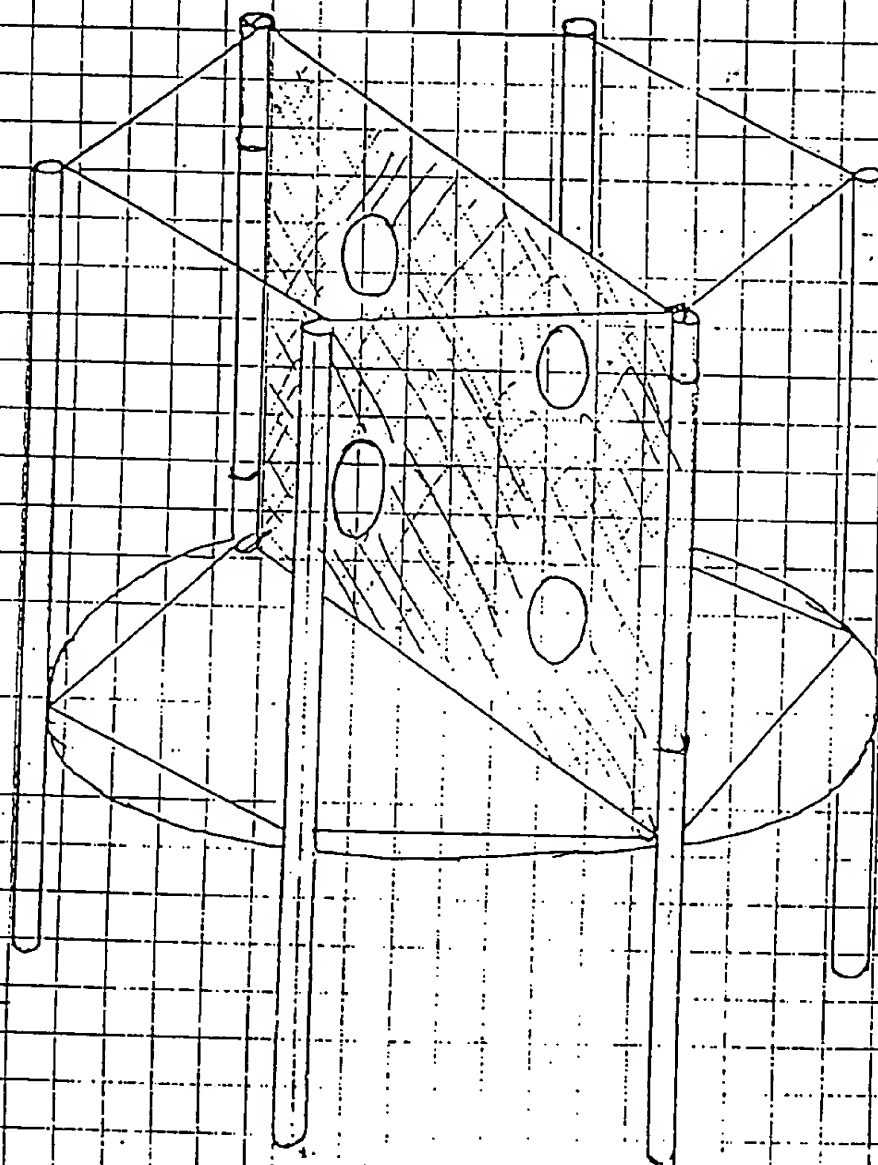


Tramp Court Game Screen

The Game Screen is an add-on to the tramp court system. It attaches to two opposite support tubes and runs across the diameter of the trampoline, dividing the bed area into two "cells." Any number of holes are made in the screen so that a ball of a given size may pass through.

Drawn:
Donald G.

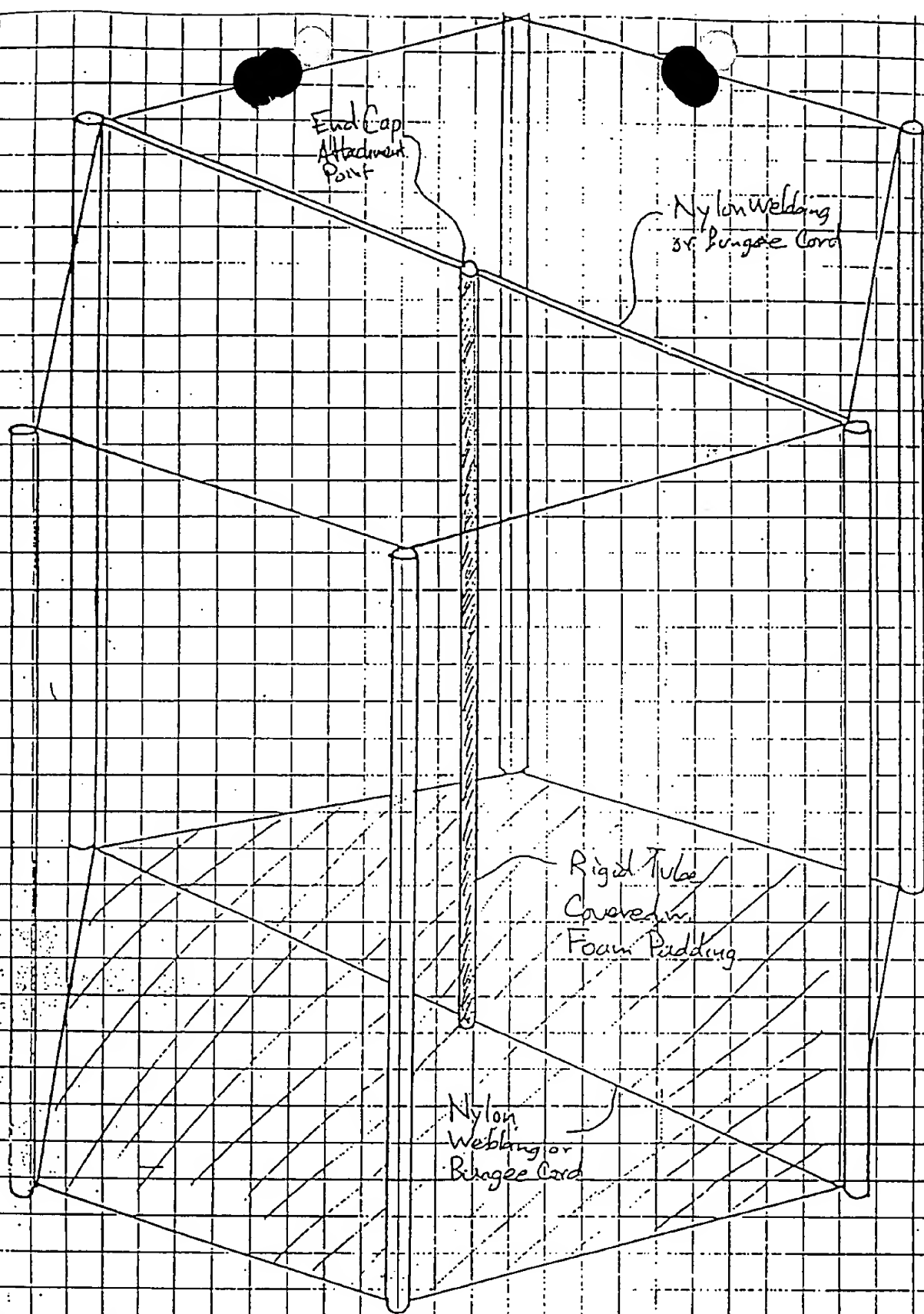
Design:
Mark P.



The screen may be made of a mesh, fabric, or plastic sheet and may be transparent, semi-transparent, or opaque. The hooks and bands used to attach it to the poles are either plastic or some type of cord. Games are played using the screen by passing a ball from one "cell" to another through the holes.

Drawn By:
Donald St

Designed:
Mark Publ
Donald St



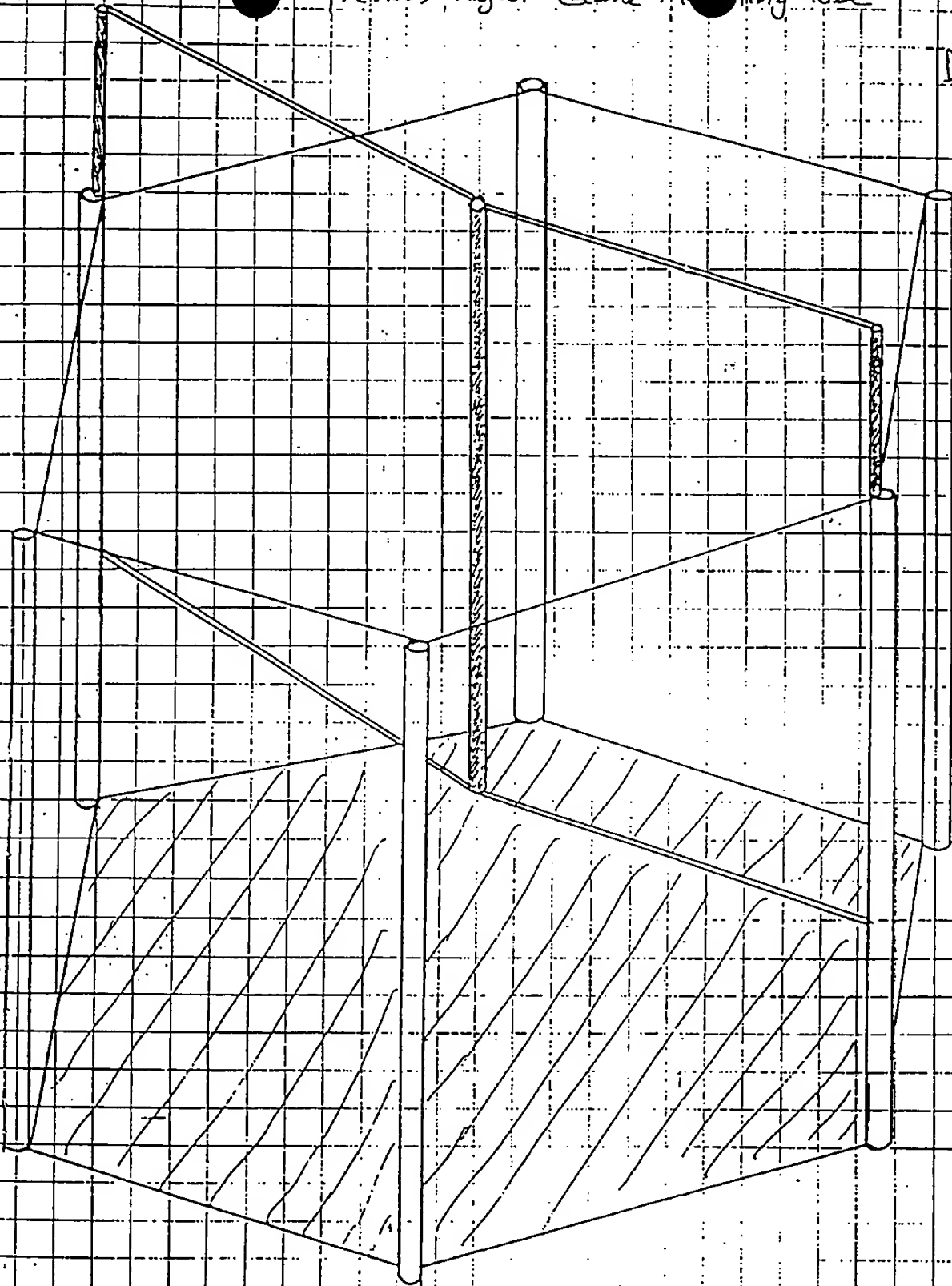
Purpose: To provide a mounting point for various games and play equipment

Materials: The tube is a rigid plastic covered with a foam padding (probably polyethylene). The end cap is plastic (Nylon, HDPE, etc.) and the top and bottom straps are either nylon webbing or elastic cord.

Purpose: Same as previous Rigid Game Mounting Tube
Construction: Same as previous Rigid Game Mounting Tube

Drawn by
Donald Sta

Designed:
Mark Publ
Donald Sta



Novel features: Mounting Tube is suspended above the bed surface so that they do not come into contact. This prevents the pole from moving violently up and down when users bounce on the trampoline.

EXPRESS MAIL EM171166139US
Deposited 7/9/97

7/9/97

Notes from Mark Publicover For the Trampoline Court

- The width of the candy-striping straps which wrap around the padding and the poles and engage the bungee cord can increase or decrease the shock absorbing properties of the padding. This is because you are increasing or decreasing the surface area of the strapping. This is one way we can adjust or tune the jump court system to specific weights. You can also do this by using bungee cord with a different diameter to vary the stretch rate. The bungee cord runs from the top of the pole, interlaces the fence, and runs down to the base of the pole. You can also use the bungee cord to actually engage the net and wrap or candy-stripe up the pole, and not use webbing or strapping at all.
- The second thing you can do is to create an enclosure with a more elastic-type configuration. This would be done using netting which is either a diamond shape, or made from nylon cord. Both of these would provide more stretch, giving the enclosure surface better energy absorbing characteristics. This would get rid of the shock absorption afforded by the bungee cord. You could, of course, accommodate the extra elasticity of the nylon cord netting and a diamond pattern, with the bungee cord, and get the same effect by reducing the rigidity of the poles.
- We have considered the different types of poles that could be used. This includes different materials such as graphite-similar to those used in pole vaulting, kevlar, carbon fiber, fiberglass, and different types of plastics. All of these could be incorporated to basically tune the system for different weights and needs.
- There are several different types of bungee cords that may be used. Many different materials may be used for the sheathing, such as nylon, polypropylene, polyester, and other products which could be made to have a high UV resistance and would wear well in the outdoors in a variety of climates.
- The caps at the top of the poles have been designed so that they are rigid enough to prevent somebody from crushing it so that they would run into the tops of the poles. There are several products which could be used for this application. One of the things we could do is to decrease the rigidity and give the homeowner a little tube of foam or some kind of caulking that they would inject into the ball. This could be done either before or after it was installed. We could do that as a second operation or we could actually hand out little balls that could be crushed and pushed in through the neck of the cap. That would add to the ability of the ball to be a little more elastic, and yet still have some mass there to prevent somebody from crushing the cap and hitting the top edge of the pole.
- The caps are currently made of PVC. We can also vary the wall thickness of the cap and go with a 90 durometer and make a thinner wall thickness. We are currently involved in testing whether or not this type of cap would be crushable, yet still stiff enough to prevent somebody impacting the top of the pole from crushing the ball enough to come into contact with the top of the pole. There are hard styrene products

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which would also work for this purpose. We are currently researching other materials that would maintain its physical properties over a wide range of temperatures.

- The shock absorption capability of the system can be varied by the density of the foam padding around the poles. There are other products, such as plastic meshes, that have certain shock absorption properties which could be used to wrap the poles. The strapping could then be wrapped around those products.
- There are a number of ways to create the shock absorption capabilities that we are looking for. The most important, of course, is to vary the density of the foam being used.
- We have thought about the fact that we could create screw-type clamp-downs that could be used to hold the legs down, in a situation where you do not want the unit sliding or tipping at all. If there are heavyweight people using the unit, we would want some way of holding the legs down. We can accomplish that by attaching a screw-shaped piece of rod into the ground. This has been done for tents, and so forth. It would have a little round piece at the top that would be able to be adjusted and fit over the leg, or clamped to the leg. We could use a pipe clamp, or several different types of clamps. We could just run the screw shape through that and just clamp it down. Another option is to attach a very stiff bungee cord to the leg or to the trampoline bed and screw the screw into the ground. This would relieve tension and yet still serve the purpose of allowing the thing to tip a little bit, without letting it move. Another option is to put the screws inward, and have the bungee cord coming from the trampoline frame down to the screw. This would allow for some limited movement, and prevent any possibility of tipping over.
- The pads that are used on trampolines cover the circular frames of the trampolines and the springs. We have several improvements to the current designs. The foam should fill the entire sleeve that is sewn for the pads. Right now, the foam that manufacturers put in the sleeve is only 8" wide, whereas the sleeve itself is 12" wide. This creates 4" of slop in there, and where the pad can slip in toward the center of the trampoline. This exposes the circular frame of the trampoline. To prevent this from happening, we can use foam which is cut to fit snugly into the sleeve so that there is no room for movement. Secondly, we can use tubular foam padding to go around the circular frame of the trampoline. Most trampoline frames have an outer diameter of 1.92". We can use tubing with an inner diameter larger than that, such as a 3" inner diameter, and split them in half. These can be packaged with PVC tape, which is very weather resistant. This will be color coordinated to match the TrampolineCourt. The foam tubing can be attached to the circular frame of the trampoline by wrapping it with the PVC tape. This idea could be important in marketing our products, allowing the customer to have a safer, or "soft" trampoline.
- Another area for improvement in pad design is the problem of keeping pads in place. We can have each manufacturer make a pad that has holes punched in it, in the area where our court attaches to the legs. This would allow the pads to be pulled down in its proper position. The U-bolts would then be slipped through the holes in the pad skirt. The holes would be punched, and the area around them would be reinforced, so that it was quite strong, and then it would slip down quite nicely over the U-bolts. Then our trampoline pad would be attached to that. Another way to reinforce that area is to stitch in a bungee cord to attach the pad to the trampoline frame. Right now most

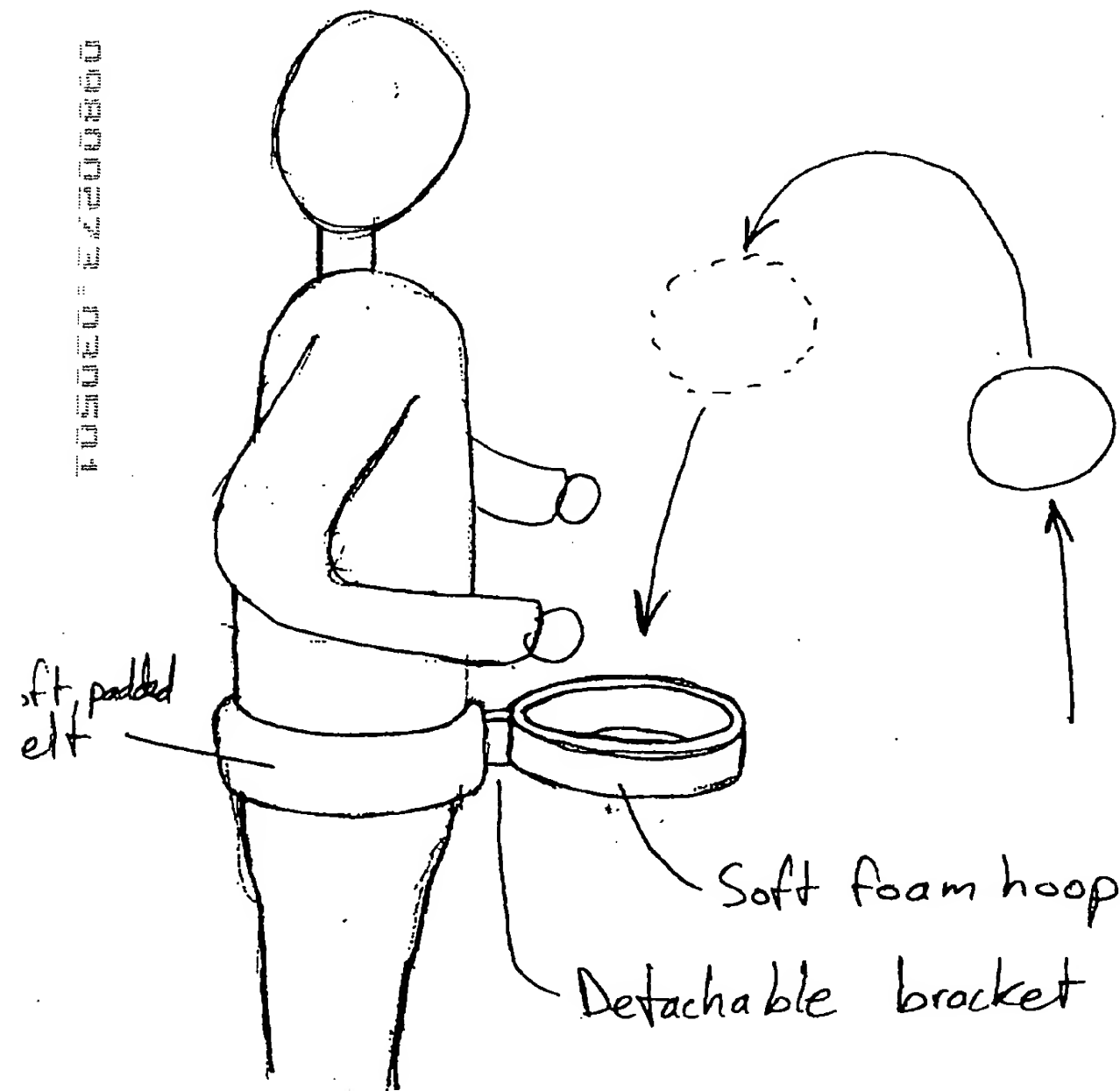
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manufacturers stitch nylon webbing to the underside of the pads and have the user tie them around the trampoline frame. The problem with this is that these ties are immovable. When someone lands on the pad hard enough, the pad is pulled inward, away from the frame, and the webbing begins to rip away from the pad. This is a very common problem. Our design is to use an elastic system to attach the pad to the trampoline frame, thereby allowing the pad to move when it is hit, and preventing the attachment points from being ripped away. (Jumpking currently makes a pad with elastic attachment straps which are fastened by a nylon buckle)

- Another improvement to the pad is to use a PVC coating. This would be more expensive, but would hold up at least 3 times as long as the material that they are currently using. We could also use HDPE, or various roofing material such as Duralast as a colorized cover fabric for the padding. Because of its tremendous durability, it would hold up at least 3 times as long as the current materials. An additional idea is to create a cover without padding that we would sell to cover the manufacturer's padding. This would be made out of PVC, HDPE, or Duralast. It would be attached by bungee cords in a Z-type pattern running underneath the frame and springs of the trampoline. You would stitch an attachment point along one side of the cover, and lace underneath the trampoline from the spring-bed connection to the other side, where you would have another connection, and then back and forth around the trampoline. You could have a cord attachment that would run along the outer edge of the trampoline, and pulls together like a draw-string. Then there is an elastic inner connection that runs from the inner edge of the cover to the bed rings of the trampoline. Then you would have a simple cover, without padding, which would prevent deterioration of the manufacturer's pad. This would not have the additional cost of stitching in padding, and all that it entails.

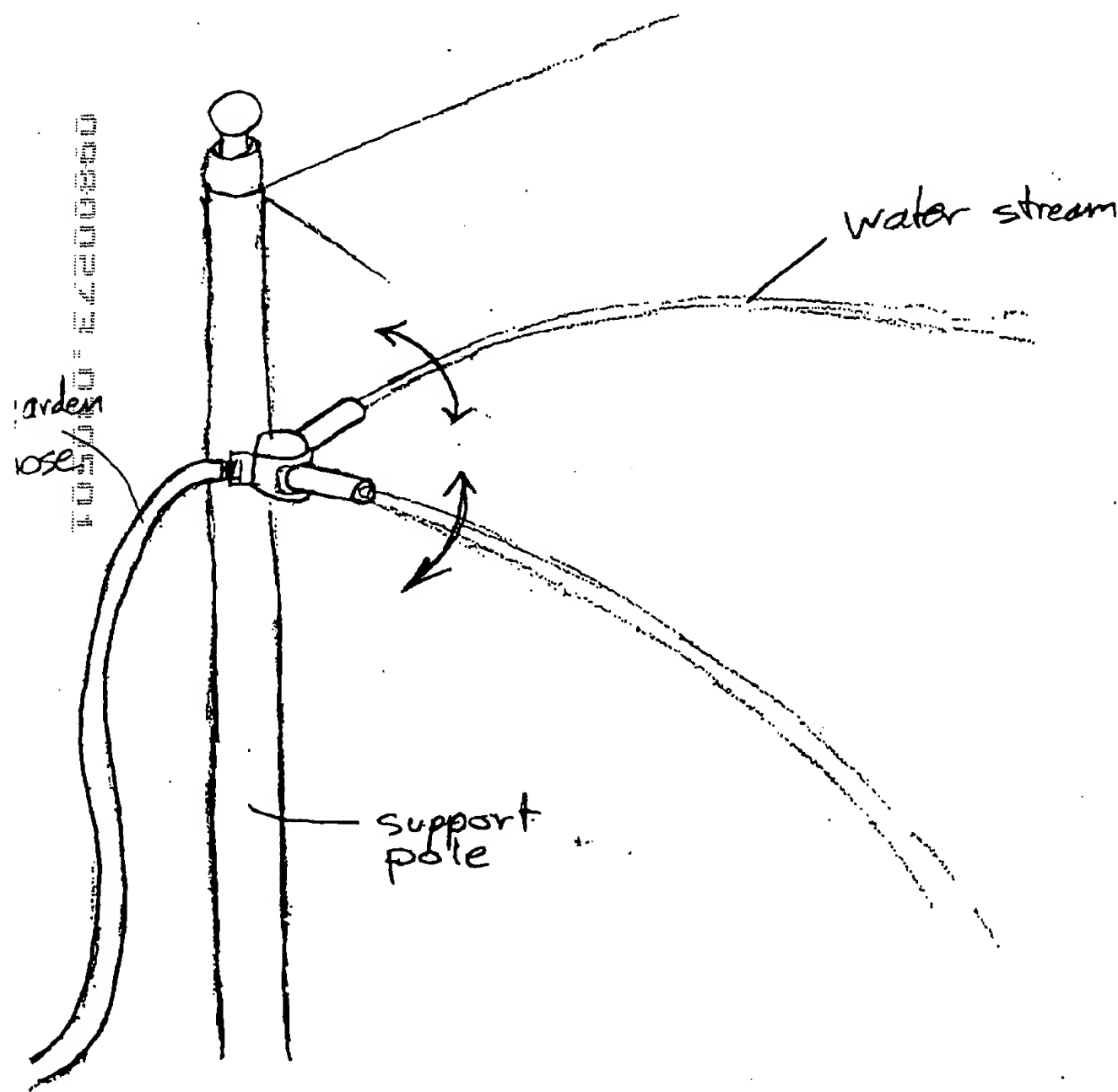
Hip Hoop

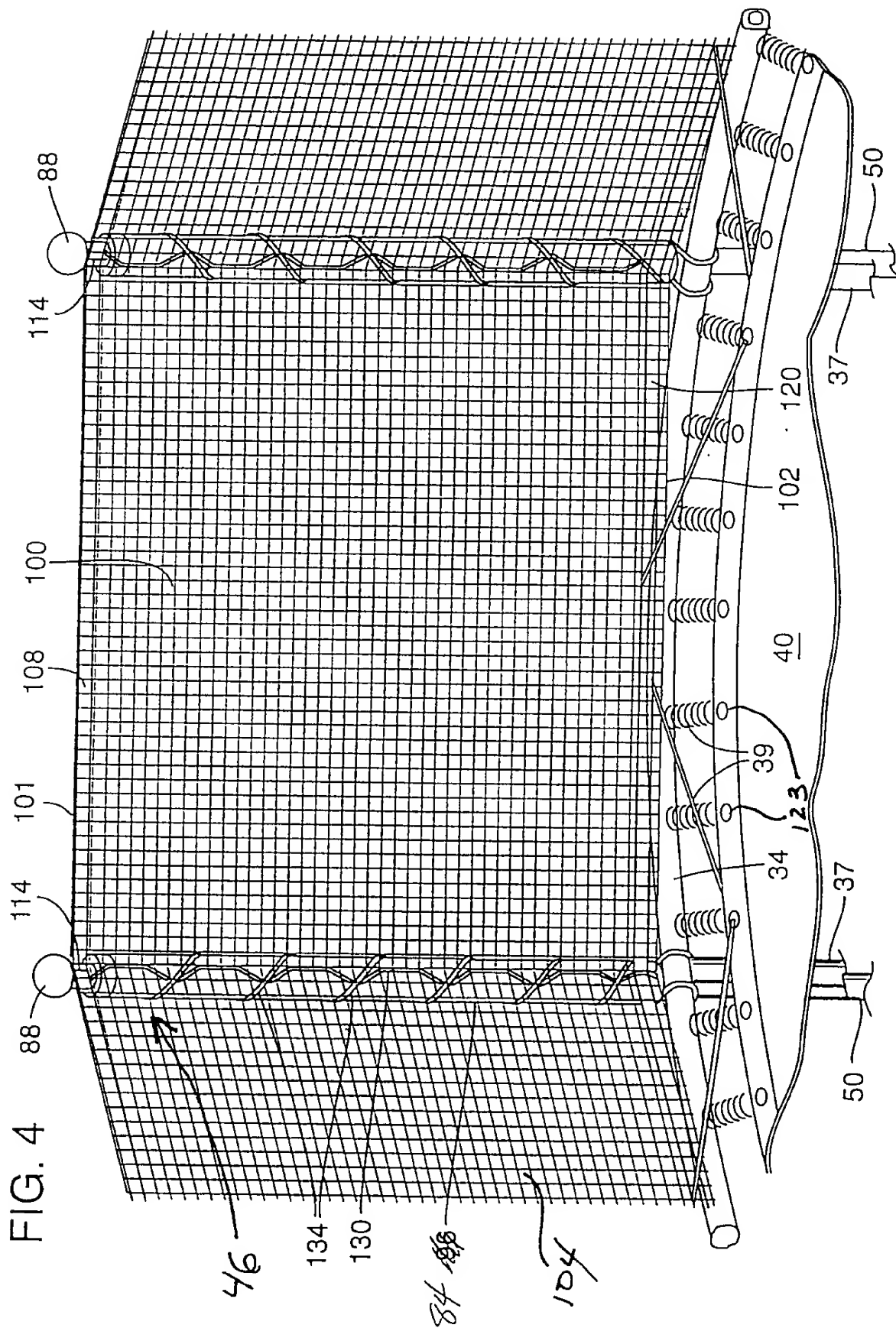
Description - game is played with the "hip hoop" device, and one or more balls. User bounces on surface of trampoline, while attempting to control the bounce of the ball. The goal of the game is to bounce the ball through the hoop.



Water Jump Rope

Description - Unit sprays moving streams of water across trampoline. User attempts to jump over or duck under spray to avoid getting wet. Motion of the spray is operated by the water pressure from the hose.





POINT OF DIAMOND-PATTERN TENCING

3 COMPLETE
DIAMOND MESHES
ARE SKIPPED

10500-220000

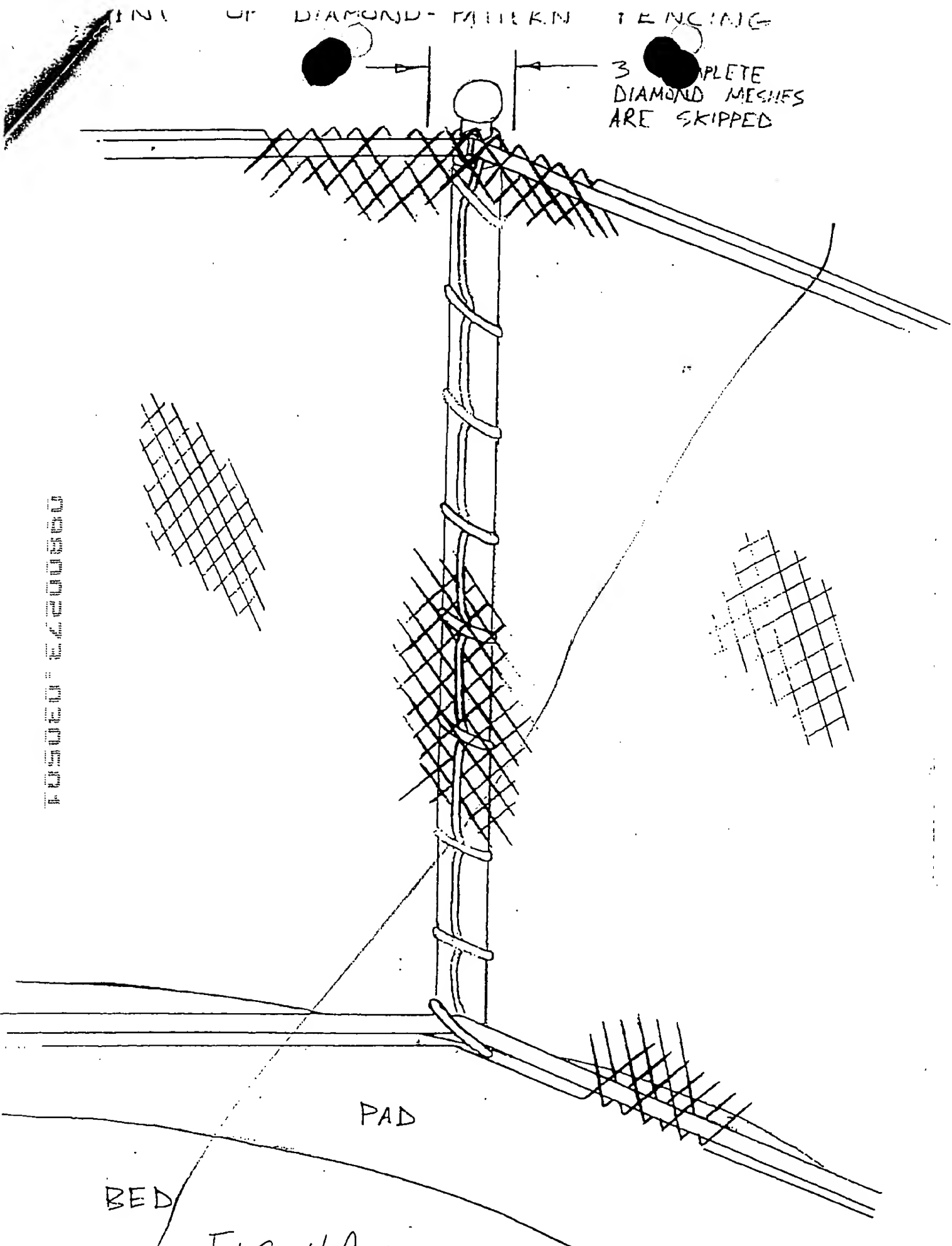


FIG. 4A

FIG. 5

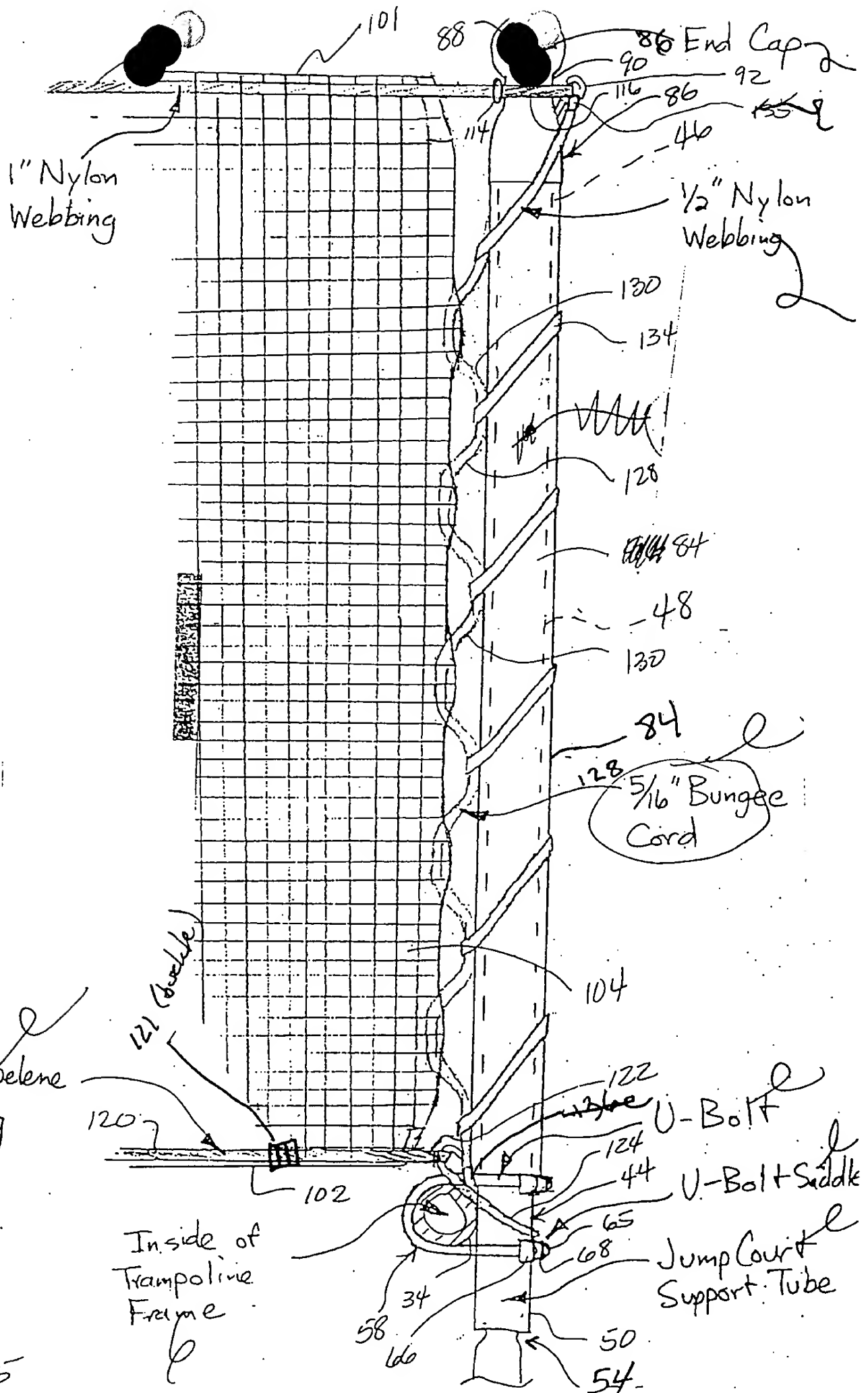
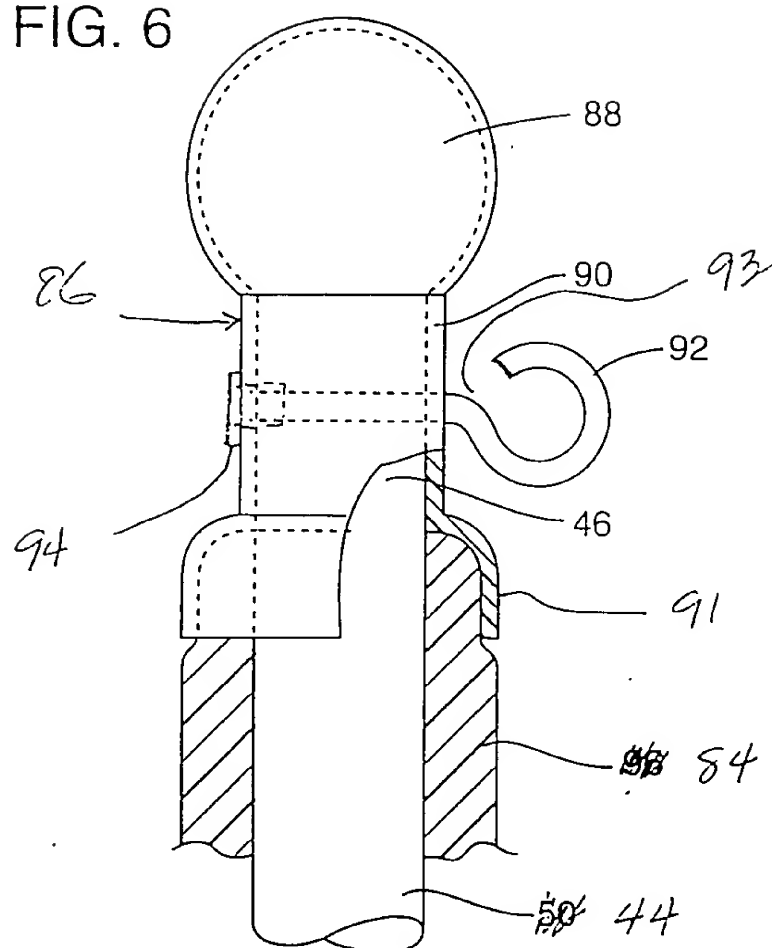


FIG. 5

FIG. 6



Attachment of elastic cord to pole cap!

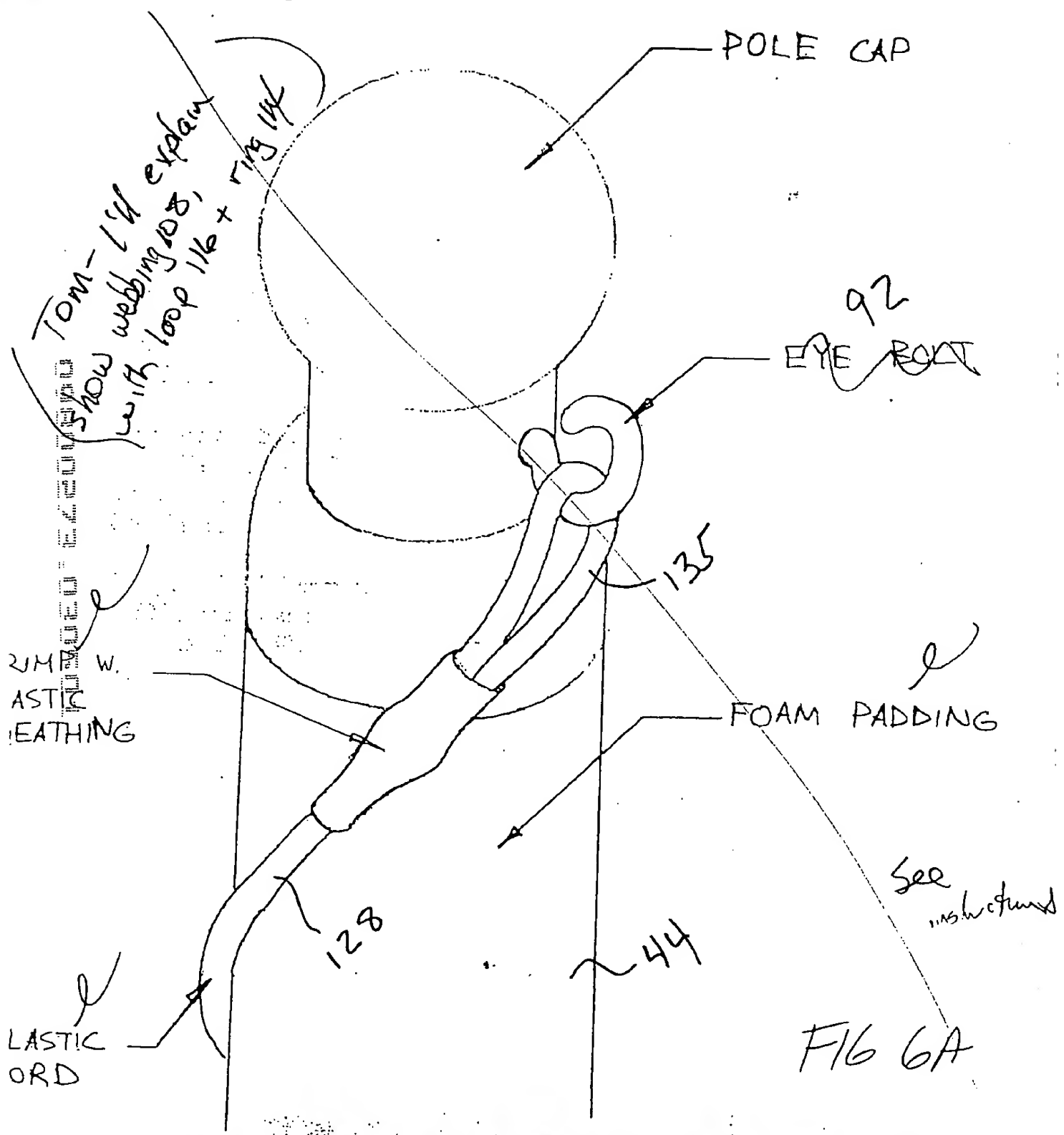
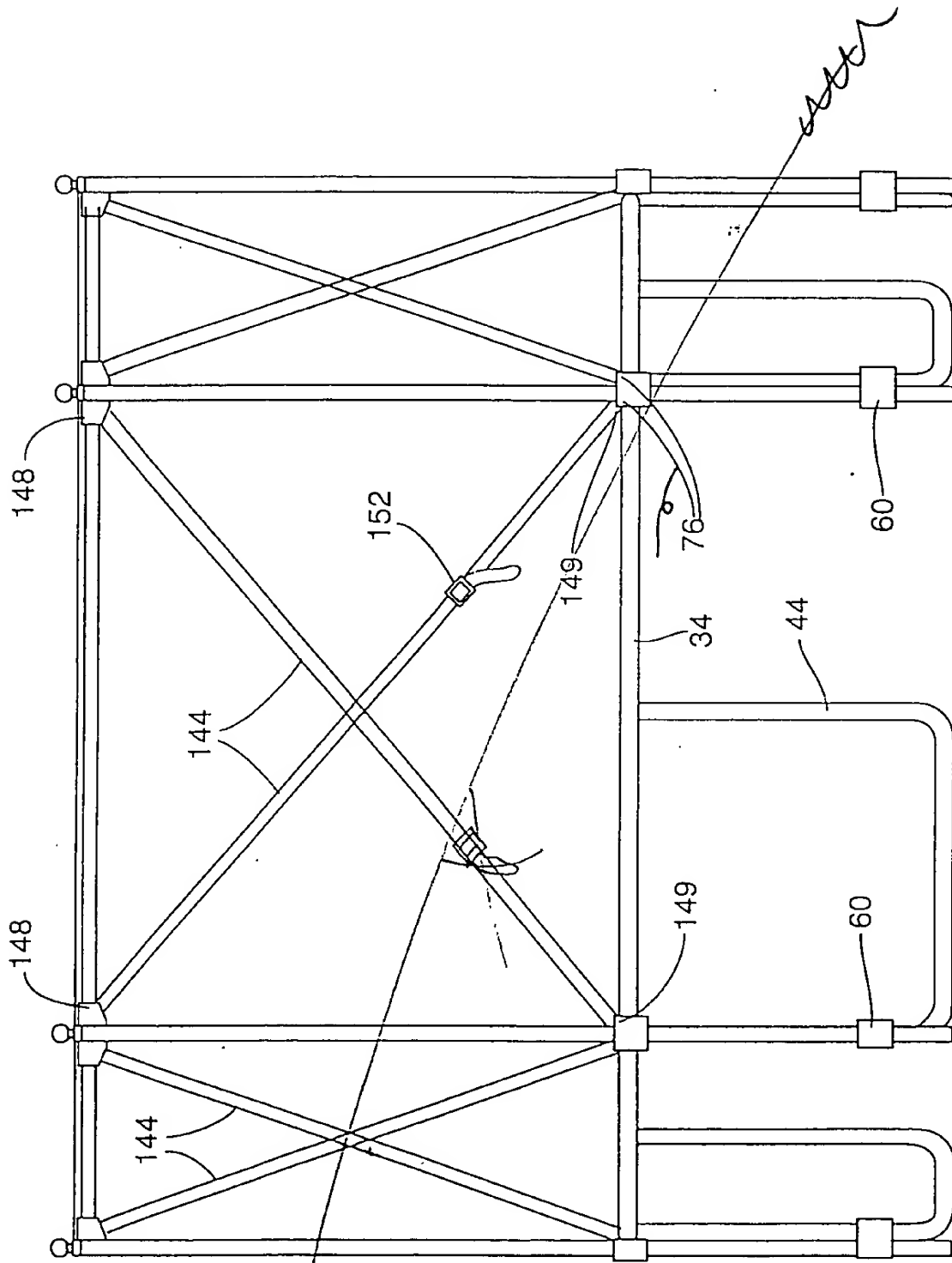


FIG. 22000000



THE TWO ENDS OF THE CARP

THE TWO PIECES
OF PLASTIC FENCE
ARE WOVEN TOGETHER
UNTIL THIS POINT

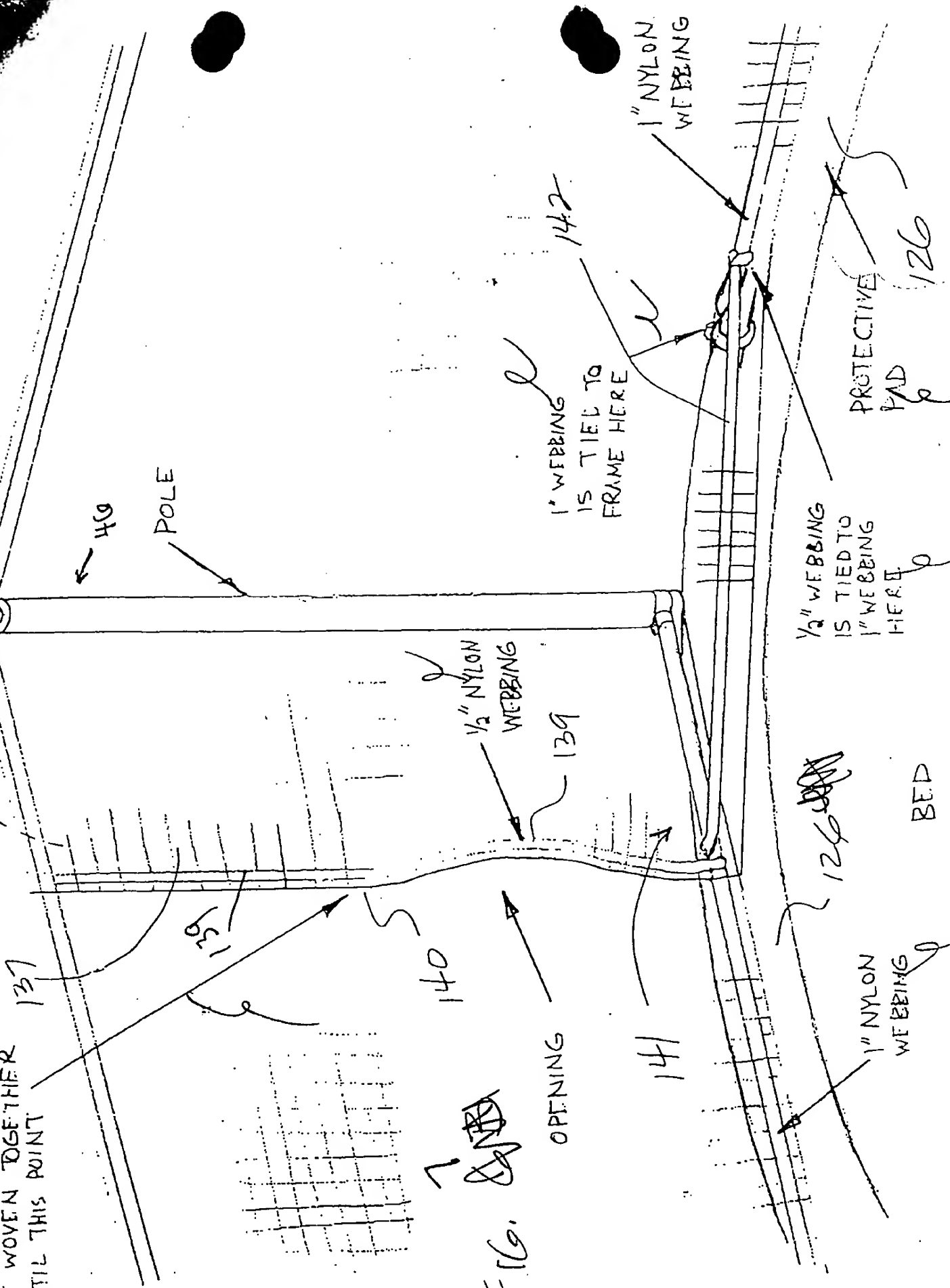


FIG. 1

FIG. 1

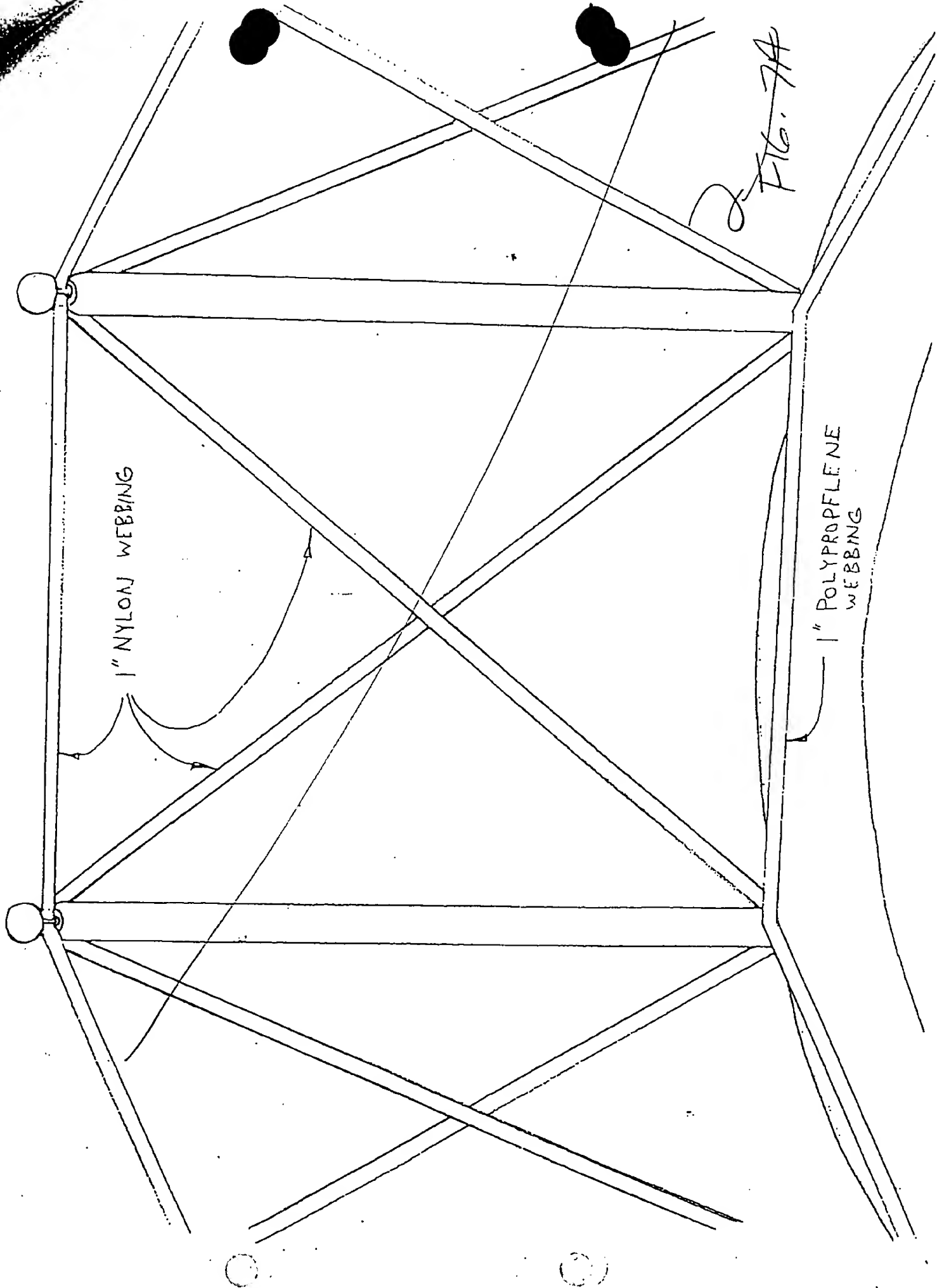


FIG. 1

FIG. 9

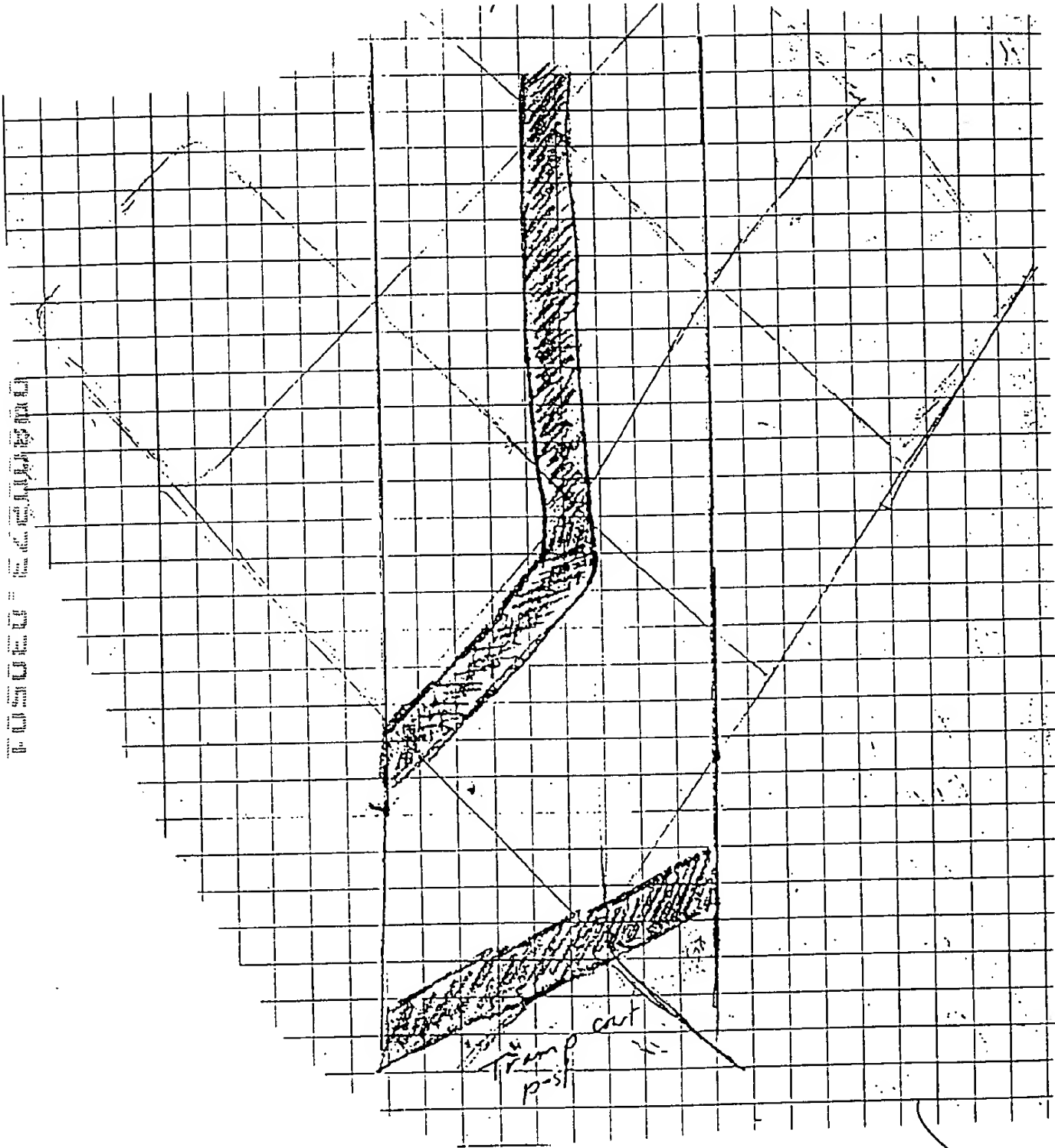


FIG. 9

405000-2-200000

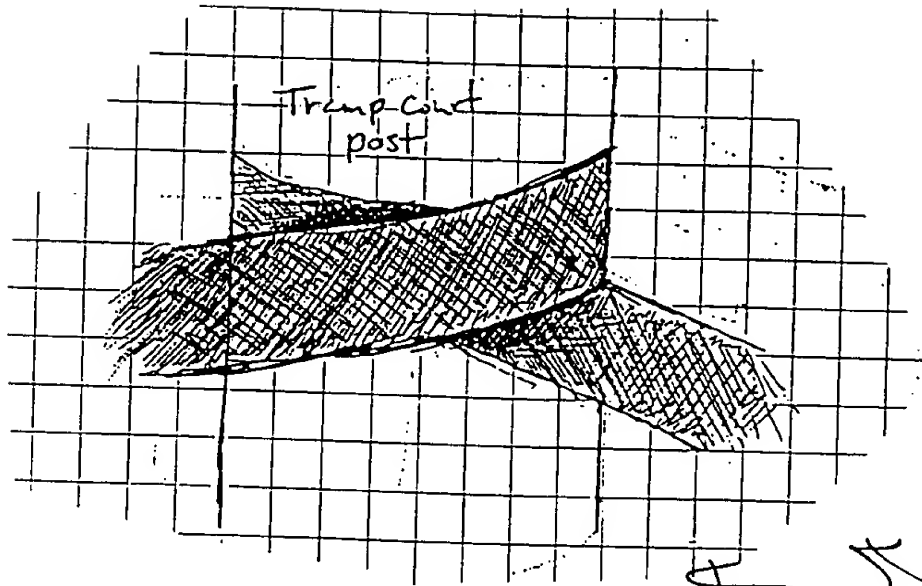


Fig. 9
~~Fig. 8~~

Show
wrap
webbing
in
neck ~~86~~ 90
of end cap
86 (see Fig. 6)

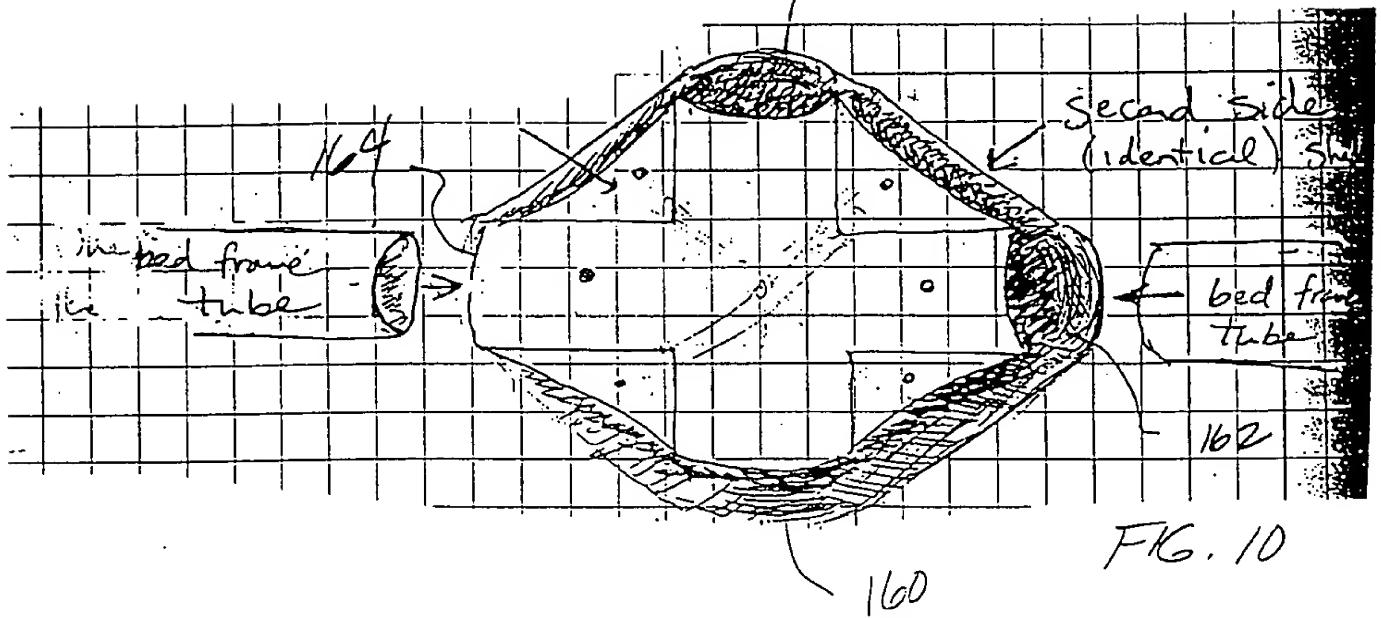


FIG. 10

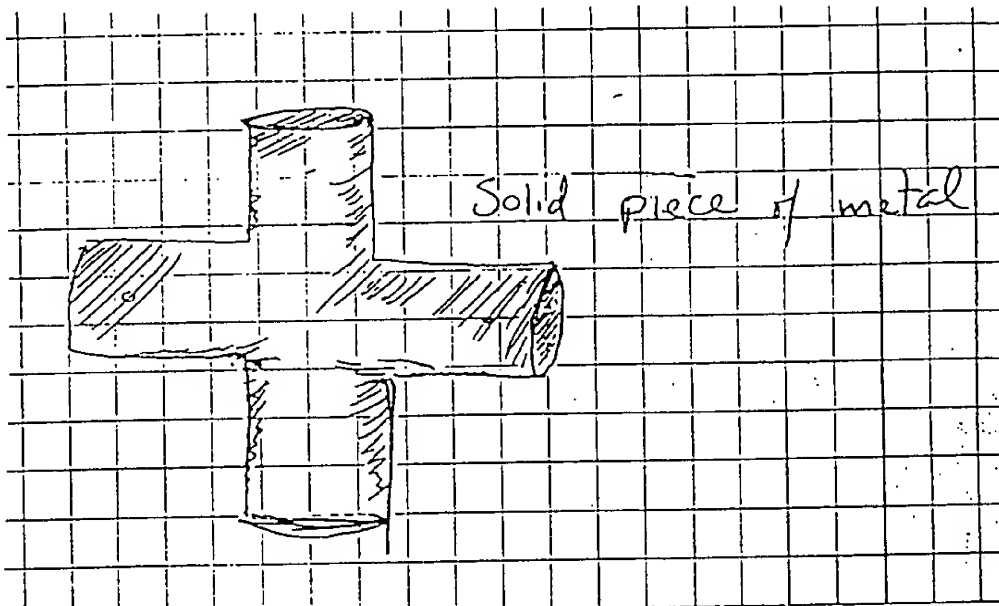


FIG. 11

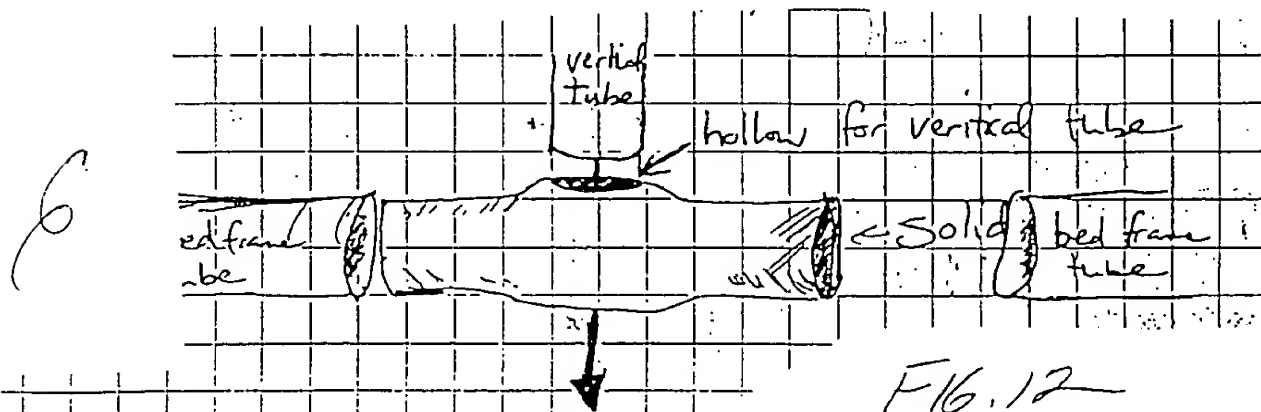


FIG. 12

Bed Switch

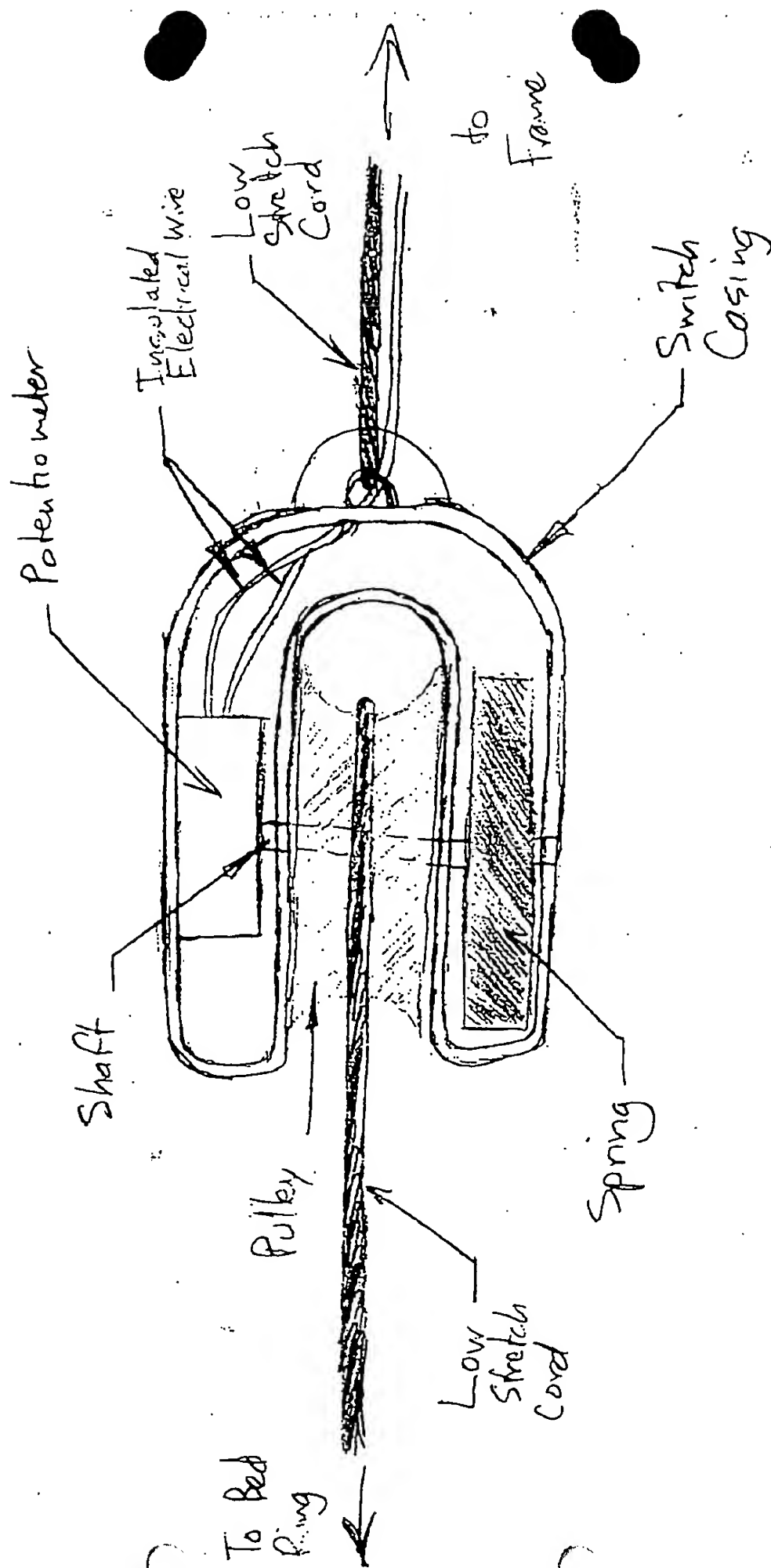


FIG. 13

Bed Switch

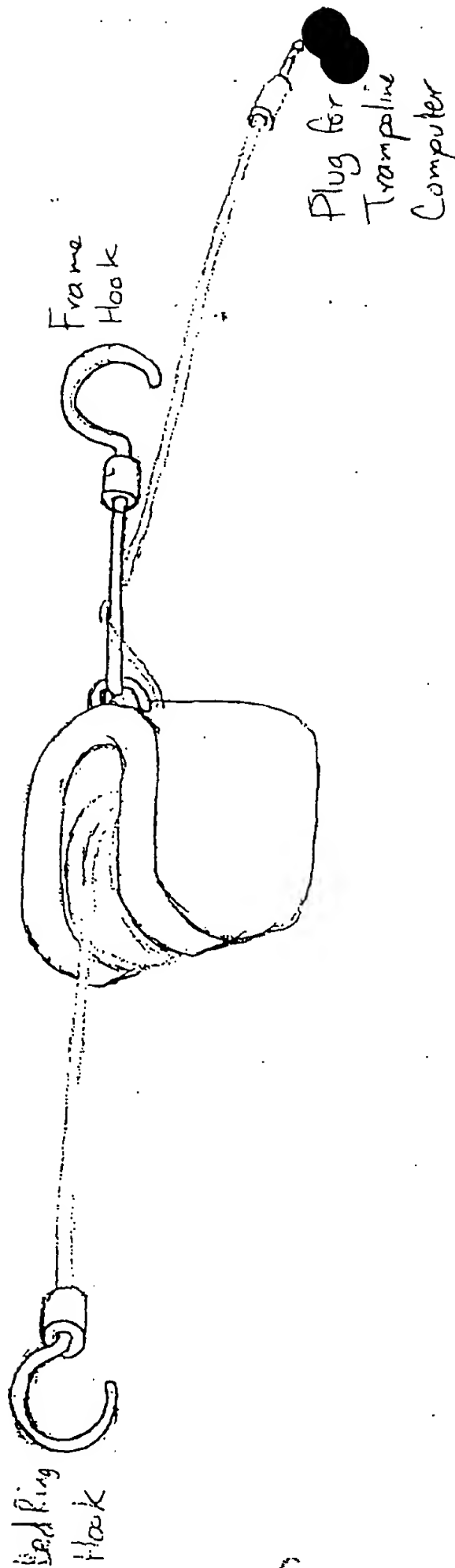


FIG. 14